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CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION. GEORGE REEDER, Meteorologist.

Vol. XXXII. Columbia, Mo., January, 1928. No. 1.

GENERAL SUMMARY.

The opening month of 1928 was mild and dry in all of Missouri. As compared with past years it was the warmest January since 1923, and only five other Januarys in 60 years have been drier. Excluding the first four days, which were decidedly wintry, the month was mainly pleasant from the side of personal comfort, and favorable for the usual winter outdoor pursuits. Minus departures of from 10° to 34° were general the first four days, but from the 6th to the 19th large plus departures were general and persistent, while the remainder of the month varied only slightly from normal temperatures, being equally divided between minus and plus departures.

There were general rains on one or more days from the 17th to the 19th, this being the first precipitation since the opening of the month. Snow covered the ground several inches the first two or three days over most of the State, and some snow fell over central sections on the 24th and 30th, but soon melted.

Notwithstanding winter wheat had very little snow cover, only scattered spots were apparently killed, the general condition being above the average. There was some farm activity, such as clearing fields and repairing fences, and small amount of plowing. Fruit buds remained dormant. The prevailing dry conditions favorably affected automobile traffic, the main highways being clear of snow and ice. The earth roads, however, were mostly in almost impassable condition.

TEMPERATURE.

The monthly mean temperature for the State, as shown by the records of 64 stations, was 33.3°, or 2.9° above the normal. It was the warmest January since 1923. Plus departures were noticeable in all divisions, except the southeastern lowlands where they approximated the normal. The first four days of the month were typical winter, when minimum temperatures ranged from a few degrees above zero to several degrees below zero generally, the lowest reached being —18° at Louisiana, Pike County. There was no more severe cold after the first week. The warmest period of the month was from the 10th to the 14th, when day temperatures ranged from 67° in the north to 77° in the south. There were only 23 days with minimum temperature of 32° or lower, and 3 or 4 with zero or lower.

PRECIPITATION.

The average precipitation for the State, based upon the records of 95 stations, was 0.87 inch, or about 1 16 inches less than the 56 years' average. As compared with past years only five Januarys have been drier. The lack of precipitation was marked in all sections but especially in the northwestern plateau where few stations received more than one-tenth of an inch. Eight stations, three in the northwest, reported inappreciable totals for the month. The heaviest monthly total was 2.26 inches, at Doniphan, Ripley County. And the greatest 24-hour amount was 1.25 inches, at St. Louis on the 24th.

The snowfall was scanty. The heaviest amounts, 1 to 2 inches, occurred from the Missouri River counties south to the Ozarks. In the northern part of the State there was, as a rule, a trace or less.

MISCELLANEOUS PHENOMENA.

Fogs, dense. -7th, 14th, 15th, 16th, 18th, 20th, 23d, and 30th.

Halos, lunar. -2d, 7th 9th, 10th, and 29th.

Halos, solar.—1st, 2d, 5th, 7th, 17th, 28th, 29th, and 30th. Sleet of Glaze.—Light at Edgerton, Kansas City, Columbia, Warsaw, Aurora, and Seymour on 24th. Springfield 30th. Thunderstorms.—19th, and 24th.

SPECIAL STORM NOTES.

Jan. 24.—High winds prevailed generally on this date. In the southeastern section of the State they reached gale force about noon. In Butler County a few roofs of dwellings were damaged, trees broken, billboards and signs blown away; damage about \$150. One person was injured. At Anniston, Missippi County, there was some evidence of rotary winds, one dwelling was blown over and the top of a newly built schoolhouse was carried away. Damage put at about \$2,500. Four persons were injured but not seriously. Strong winds were felt over adjacent counties but no damage occurred.

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

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Beginning January 1, 1928 wind velocities are by 3-cup anenometers.

COMPARATIVE DATA FOR JANUARY

	7			LVI	DAT	AFOR	JAN	UAF	EX.			
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Year.	Mean.	Бераните.	Highest.	Lowest.	Mean.	Departure.	Greatest in 24 hours.	Total snowfall, unmelted.	With .01 inch or more.	Clear.	Partly cloudy.	Cloudy.
1924 1925 1926 1927	21.5 31.8 33.8 34.1 24.0 32.9 28.4 35.0 30.1 27.0 30.1 34.7 32.9 35.6 35.0 36.1 37.1 32.9 31.4 32.9 33.1 32.9 33.1 34.6 33.1 32.9 33.1 34.7 35.6 36.0 37.1 38.6 38.6 38.6 38.6 38.6 38.6 38.6 38.6	-8.7 +1.6 +3.9 -6.2 -7.7 +1.2 -5.5 +2.7 -1.8 +4.1 0.0 +4.3 3.2 -0.1 +4.8 -0.1 +4.2 +3.5 +4.1 +4.4 -11.3 +6.9 -2.2 +0.7 +2.1 +1.0 +3.6 +2.7 +2.1 +4.1 +1.8 +6.9 -1.0 +3.6 +2.7 +2.7 +2.1 +4.1 +4.3 +4.8 +6.9 +6.9 +6.9 +6.9 +6.9 +6.9 +6.9 +6.9	73	$ \begin{array}{c c} 3 \\ -25 \\ -15 \\ -20 \\ -24 \end{array} $	1,91 2,36 4,25 1,80 4,25 1,80 2,21 1,49 1,17 4,90 1,25 1,30 1,23 3,64 5,10 1,13 2,85 5,10 1,13 3,64 5,10 1,168 1,56 1,17 1,17 1,17 1,17 1,17 1,17 1,17 1,1	-0.08 +0.37 +2.26 -0.47 -0.19 -1.54 -0.22 -0.50 -0.82 +2.91 +1.99 -0.76 -0.63 +0.86 -0.20 -0.20 -0.20 -0.165 +3.11 -0.48 +0.18 -0.70 -1.20 -0.50 +1.65 +3.11 -0.70 -1.20 -0.50 +1.81 -0.70 -1.30 +1.99 +5.16 -0.63 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30 -0.65 -0.30	0.90 2.96 2.240 6.95 2.33 3.35 2.40 2.30 3.37 4.74 2.52 2.13 3.03 2.10 3.03 3.03 3.03 3.03 3.03 3.03 3.03 3	 4.3 2.4 4.3 1 4.0 0.2 2.7 9.4 4.0 0.2 6.9 6.9 7.4 4.0 0.2 2.8 6.9 7.4 4.0 6.5 6.5 0.5 1.0 4.0 6.5 6.5 6.5 1.0 4.0 6.5 1.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	66 9 6 4 4 3 5 5 4 8 9 6 4 4 4 5 6 8 8 6 6 12 5 7 5 5 5 4 8 4 8 12 5 7 2 5 6 5 6 6 7 4 6 6 6 3	 14 9 13 14 10 12 11 17 16 13 14 14 14 17 19 16 13 11 18 11 12 20 11 12 11 11 12 11 11 11 11 11 11 11 11	811987788777666656576776755755757767	9 11 19 9 9 14 12 12 11 11 11 12 18 18 12 12 12 12 12 12 12 12 12 12 12 12 12

Climatological Data for January, 1928

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Stations.	Counties.	Elevation, feet.	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the the normal.	Greatest in 24 E hours.	fall.	With precip	Clear.	Partly cloudy	Cloudy.	Prevailing direction of wind.	Observers.
Kirksville Louisiana †† Macon Mexico Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Unionville Warrenton Keokuk, lowa.	Pike Macon Andrain Monroe St. Charles St. Louis City do. Shelby	652 731 784 876 661 818 700 534 557 969 875 800 748 4568 578 779 650 1,062 814	48 28 37 6 47 39 40 35 39 38 38 38 38 38 38 39 53 15 34 45 55 	29.4 30.2 32.8 30.2 30.6 30.3 30.9 429.8 33.6 29.0 30.4 33.5 34.7 33.8 30.2 29.2 33.7 29.5 31.3	+ 2.6 + 1.5 + 3.6 + 3.4 + 0.6 + 2.6 + 4.9 + 5.7 + 2.1 + 2.1 + 3.5 + 2.4 + 3.5 + 3.6 + 2.4 + 3.6 + 2.4 + 3.6 + 2.1 + 3.6 + 3.7 + 3.7 + 3.7 + 3.7 + 3.7 + 3.6 + 3.7 + 3.	66 66 69 73 73 63 70 67 70 71 72 71 72 65 63 75	14 14 14 14 14 15 14 14 14 14 14 14 14 14 14 14 14	-10 -13 -9 -8 -12 -12 -14 -10 -9 -18 -12 -10 -5 -612 -8 -11 -10 -18	2 1 1 2 1 3 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 1	38 31 27 31 37 38 36 31 35 35 32 28 29 32 32 36 27 41	0.24 0.27 0.94 0.03 0.67 0.87 0.27 0.41 0.94 T 0.30 0.25 1.09 0.48 1.22 1.91 1.60 0.26 0.30 0.08 1.43 0.41 0.63	$\begin{array}{c} -1.39 \\ -1.33 \\ -1.33 \\ -1.29 \\ -1.70 \\ -1.32 \\ -1.48 \\ -1.28 \\ -1.28 \\ -1.28 \\ -1.25 \\ -0.96 \\ \cdots \\ -1.05 \\ -0.43 \\ -1.46 \\ -1.86 \\ -1.46 \\ -1.86 \\ -1.35 \\ -1.35 \\ -1.35 \\ -1.35 \\ -1.35 \\ -1.35 \\ -1.35 \\ -1.35 \\ -1.36 \\ -1.$	0.10 0.22 0.72 0.03 0.39 0.53 0.26 0.20 0.70 0.12 0.25 0.25 0.30 0.91 1.25 1.04 0.25 0.25 0.06 0.30	0.5 0.2 1.9 T. 0.8 1.5 0.1 0.6 0.2 0.0 1.3 0.0 1.3 0.0 1.5 1.1 0.8 0.0 T. T.	4 3 4 1 3 4 2 5 6 0 0 4 1 4 3 4 2 2 4 2 2 4 4 2 2 4 4 2 2 4 4 4 2 2 4 4 4 2 2 4 4 4 4 2 2 4 4 4 4 2 2 4 4 4 4 4 4 4 2 2 4 4 4 4 4 4 2 2 4 4 4 4 2 2 2 4 4 4 4 2 2 4 4 4 2 2 4 4 4 2 2 4	19 14 15 17 10 14 15 17 16 20 17 20 18 14 15 17 17 16 16 16 16 16 17 17 18 14 15 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	0 11 8 6 14 5 7 4 4 4 5 9 8 8 6 7 5 11 11 10 7 7	12 6 8 8 8 7 12 9 10 11 6 5 8 6 9 9 5 12 9 9 5 12 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	nw. sw. sw. nw. sw. nw. w. ne. nw. sw. w. sw. sw. sw. sw. sw. sw. sw. sw	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Burean James Taylor J. D. Settle Chamber of Commerce J. W. Pulliam U. S. Weather Burean Miss Emma Swift Prof. J. S. Stokes J. T. Farrell W. C. Brown Mrs. Abbic Snoddy J. S. Convay L. C. Saeger U. S. Weather Bureau St. Louis I niversity J. C. Jewett Frank Hall Geo. W. Davis Prof. A. W. Ebeling U. S. Weather Bureau
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Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation.

*** Regular U.S.** Weather Briefund strength of 24 hours ending a unomat their recorded is for the preceding 24 hours.

*** Precipitation in the next following measurement; separate dates of fall not recorded.

** Precipitation is for 24 hour period midnight to midnight.

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CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION. GEORGE REEDER, Meteorologist.

Vol. XXXII. Columbia, Mo., February, 1928. Non21

GENERAL SUMMARY.

February, 1928, in Missouri, continued the fine weather Ath. record of the preceding winter month, being mainly mild although somewhat wetter than January. Though more than 5° Halos, solar.—15th, 22d, 25th, 28th, and 29th. warmer than the normal, it was the coolest of the last Normal SITS lost, light and unimportant.—13th, 15th, 21st, Februarys but on the other side it was the first February with above normal amount of precipitation since 1915. There have been twelve consecutive Februarys on the minus side of the precipitation normals, three or four of these being noticeably lacking in moisture.

If anything, the month was actually milder than the average temperature indicates. Beginning with the 3d, plus temperature departures ranging from 5° to 25° a day prevailed until the 17th, and during the remaining 12 days there were

three or four other real spring-like days.

The month had only one general rain period of importance, and this one was about four days, beginning with the 4th. Aside from a moderate cold wave with snow on the 23-24th, there was little precipitation of importance during the latter half of the month. In fact, when viewed from all sides, the month was without any very unusual features of any kind, its characteristic probably being the absence of those elements usually expected in February.

Owing to much cloudiness and deep thawing, and the general bad condition of all earth roads there was little farm activity. Wheat fields showed some little greening in spots but mainly remained in the dormant state. Much is thought to be seriously injured in the southern-third of the State, the result of no snow protection during the few coldest snaps. Live stock has done well as there has been plenty of rough feed. Soil moisture was ample for all winter needs. All fruits continued mainly dormant.

TEMPERATURE.

The monthly mean temperature for the State, 68 stations reporting, was 37.0°, or 5.2° above the normal, and the fourth consecutive February characterized by marked mildness for a winter month. The temperature excess was uniform, all sections experiencing about the same plus departures. Two moderate cold waves overspread the State, on the 18th and the 24th. Zero at Unionville on the 18th, and slightly below zero at Lamonte and Warsaw on the 24th were the only instances of zero cold. The 18th was the coldest day at 47 stations, and the 24th was the coldest for the month at 20 stations. On the 11th temperatures were 70° or higher generally. The average number of days with temperature 32° or lower was 21.

PRECIPITATION.

The monthly precipitation, based upon the reports of 95 stations, was 2.28 inches, slightly more than the 56 years' average and the first February with more than the normal precipitation since 1915. However, the distribution of precipitation was not as uniform as was the temperature distribution. The western and northern divisions received more than the normal, while it was drier than usual in the southeastern lowlands and most of the Ozark Plateau. The larger part of the precipitation fell during the first half of the month, and the heaviest amounts about the 4th to the 6th. The greatest monthly amount was 4.10 inches, at Centerview, Johnson County; and the greatest fall in 24 hours also was at Centerview, 3.25 inches, on the 6th.

The snowfall was light, averaging less than 2 inches for the State as a whole, and soon melted. Some snow fell on the 8th,

14th, 17th, 23d, and 29th, and about three days beginning on the 23d was the longest period with any snow on the ground. Locally in Cass, Johnson, Boone, Audrain, Warren, Dent, Iron, St. Francois Counties the monthly total equaled or exceeded 4 inches.

MISCELLANEOUS PHENOMENA.

Fogs, dense. -4th, 5th, 6th, 13th, and 22d. Nearly all-day general dense fog on 5th and 6th, and at two stations on the

Halos, lunar.—1st, and 22d

22d, 23d, and 29th.

Thunderstorms. - More or less general on the 6th; locally on the 23d.

The 6th, 17th, 19th, and 23d were more or less windy days, but there were no strong or damaging winds anywhere during the month.

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

	n pressure rel).	rela	ean tive idity.	Snus	hine.		W	ind.		
Stations.	Mean barometric pr (sea-level	7 a. m.	7 p. m.	Total hours.	Percentage of possible.	Total move- ment, miles.	Average hourly relocity.	Miles per hour.	Direction.	Date.
Columbia. Hannibal Kansas City St. Joseph St. Louis Springfield Cairo, 111 Keokuk, Iowa	30.12 30.11 30.13 30.11 30.17 30.14 30.16 30.12	81 77 76 78 77 81 78 74	67 .:. 62 58 68 61 62 65	165 195 195 155 168 161	53 62 63 50 53	5,763 6,309 7,254 5,966 8,412 6,870 6,178 5,424	8.3 9.1 10.4 8.6 12.1 9.9 8.9 7.8	26 26 34 29 32 28 28 28 25	nw. nw. nw. nw. s nw. s	17 19 17 17 17 17 6 23 19

Beginning January 1, 1928 wind velocities are by 3-cup anenometers.

COMPARATIVE DATA FOR FEBRUARY.

	1	'empera	ture.			Precipita	tion.		Nuı	nber	of da	ıys.
Year.	Mean.	Departure.	Highest.	Lowest.	Mean.	Departure.	Greatest in 24 nours.	Total snowfall, unmelted.	With .01 inch or more.	Clear.	Partiy cloudy.	Clouds.
1888 1889 1890 1891 1892 1893 1891 1895 1896 1897 1898 1899 1900 1901 1902 1903 1905 1906 1907 1908 1909 1910 1910 1911 1911 1911 1915 1916 1917 1918 1916 1917 1918 1919 1919 1919 1919 1919 1919 1919 1919 1919 1910 1911 1911 1911 1912 1918 1919 1918 1919 1919 1919 1919 1919 1919 1919 1919 1919 1919 1919 1919 1919 1910 1911 1911 1912 1918 1919 1918 1919 1919 1919 1919 1910 1911 1912 1918 1919 1922 1922 1923 1924 1925 1926 1927 1928	33.0 29.3 35.5 37.7 37.7 27.9 32.7 27.9 35.6 34.8 35.4 24.0 20.2 21.5 35.6 34.8 35.4 24.0 30.0 31.5 34.8 35.4 35.6 34.8 35.6 34.8 35.4 35.6 35.6 35.6 36.6 37.7 37.7 34.8 35.6 36.6 37.7 37.7 37.7 37.7 37.7 37.7 37	+2.0 -1.7 +4.5 +1.7 -3.1 -0.2 -7.4 +4.6 +3.8 +4.4 -10.6 -4.8 -2.9 -7.0 -1.0 -9.5 +2.7 +3.8 +4.2 +7.8 +2.7 +7.1 -2.7 -7.1 -7.2 -7.4 +1.6 +1.8 +2.9 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 -9.5 +1.0 +1.0 +1.0 +1.0 +1.0 +1.0 +1.0 +1.0	73 81 76 76 77 77 77 77 78 77 78 77 78 78 77 78 78	-11 -9 -7 -8 -20 -12 -26 -10 -15 -9 -17 -17 -25 -18 -19 -17 -21 -18 -19 -11 -17 -18 -19 -19 -11 -17 -18 -19 -19 -19 -19 -19 -19 -19 -19 -19 -19	2.04 2.57 2.24 2.18 2.19 2.52 0.55 0.55 1.62 2.30 1.62 2.17 3.92 2.18 1.63 1.50 2.92 2.28 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63	-0.28 +0.25 -0.08 +1.83 -0.34 +0.20 -1.77 -0.71 -0.02 -0.70 -0.15 +1.60 -0.69 -0.82 +0.60 -1.41 -0.68 +0.04 +1.06 -0.34 +1.32 +0.13 -0.18 +0.42 +0.81 -1.48 -2.03 -1.41 -1.48 -2.03 -1.41 -1.48 -2.03 -1.41 -1.48 -2.03 -1.41 -1.48 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49 -2.03 -1.41 -1.49	2.30 3.60 2.90 3.60 2.90 3.60 2.95 2.35 2.35 2.35 2.40 3.72 2.40 3.72 2.80 2.90 2.90 2.10 1.20 2.10 1.20 2.10 1.20 2.10 1.20 2.10 1.20 2.10 1.20 2.10 1.20 2.10 1.20 2.10 2.1	2.4 4.6 11.2 3.3 4.1 8.2 0.8 5.3 16.6 5.8 5.3 13.2 4.1 4.1 4.1 7.7 6.3 11.9 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1	7776996655755606575887699968677852477445576657		67866786686655656565656565656686	16 11 10 8 9 14 9 8 8 12 8 9 11 10 10 10 11 11 12 11 11 12 11 12 8 8 10 11 10 11 11 11 11 11 11 11 11 11 11

					Clin	natol	ogica	l Dat	a fo	r Fe	brua	ry, 19	2,8							
				7	l'empera	ture, i	n degi	rees Fa	hr.	}	Preci	pltation	, in lu	ches.	Nu	nbei	ofd	ays.	ion	
Stations.	Counties.	ä l	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	With precip.	Clear.	Partly cloudy	Cloudy.	Prevailing direction of wind.	Оіжегуегь.
Northeast Plain. Brunswick Clifton Hill Columbia Downing Fayette Fulton Gorin Hannibal Jefferson City Kirksyille Louisiana †† Macon Mexico Monroe City St. Louis (1) St. Louis (2) Shelbina Steffenville Unionville Warrenton Keokuk, Iowa Section means and	Chariton. Randolph Boone. Schuyler. Howard Callaway Scotland. Marion. Cole. Adair Pike. Macon. Audrain. Monroe St. Charles. St. Louis City. do. Shelby. Lewis. Putnam Warren Lee, la. extremes	652 731 784 876 661 818 700 534 557 969 875 800 748 4568 578 779 650 1.062 816 614	48 28 37 6 47 39 40 35 39 38 33 15 34 29 34 45 55 	34.2 34.9 36.4 34.6 35.8 36.7 33.8 37.1 33.7 35.2 36.4 35.8 37.6 36.4 35.6 37.6 36.4	+ 5.1 + 5.7 + 4.7 4 + 2.9 4 + 5.8 + 7.9 + 7.4 + 5.0 2 + 2.6 + 4.2 + 2.6 + 7.9 + 7.1 + 5.9 + 7.1 + 5.8	65 66 66 61 65 68 61 67 62 60 66 66 62 62 62 62 65 59 68	12 12 12 13 11 13 11 12 12 12 12 12† 12 12 12 12 12 12 12 12 12 12 13 13 13 13 14 15 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	7 4 7 2 4 7 6 2 2 2 3 7 7 9 11 10 4 0 7 6 6 6 6 7 6 6 7 6 6 7 6 7 6 6 7 6 7	18† 18 18 18 24 18 24 18 24 18 24 18 18 18 18	44 38 31 38 33 30 30 34 41 47 36 30 30 31 33 30 31 31 30 31 31 31 31 31 31 31 31 31 31	2.35 2.03 2.10 2.41 2.16 1.03 2.74 2.02 1.96 2.91 2.24 2.22 2.65 2.19 2.43 2.99 2.43 2.99 2.24 3.26 1.75 2.25	$\begin{array}{c} +0.59 \\ +0.70 \\ -0.12 \\ +1.01 \\ +0.26 \\ -0.86 \\ +1.25 \\ +0.35 \\ -0.49 \\ +0.14 \\ +0.56 \\ +0.01 \\ \cdots \\ -0.49 \\ +0.01 \\ \cdots \\ -0.49 \\ +0.63 \\ +0.63 \\ +0.63 \\ +0.63 \\ +0.63 \\ +0.63 \\ +0.63 \\ +0.63 \\ +0.27 \\ \end{array}$	1.05 0.89 1.01 0.92 1.25 0.41 1.31 0.89 0.85 1.20 0.83 0.82 0.60 0.89 1.02 1.18 0.85 1.05 0.40 0.73 1.31	0.7 1.0 4.0 1.5 T. 2.0 T. 0.9 3.0 0.5 1.1 2.0 5.0 5.1 7.5 2.5 2.4 0 1.7 2.3	7 8 10 9 6 10 6 9 9 6 9 7 11 9 9 9 7 8 10 9 8 8	12 11 13 13 8 10 12 12 12 12 15 18 14 10 13 14 12 12 12 12 12 12 12 12 12 12 12 12 12	4 7 4 5 11 7 7 5 2 7 5 10 4 2 8 7 5 6 6	13 11 12 10* 11 14 12 12 15 10 9 11 10 9 12 13 9 10 11 11 13 11 11 11 11 11 11 11 11 11 11	nw. nw. sw. n. nw. sw. w. sw. nw. w. sw. n. nw. nw. nw. nw. nw. nw. nw.	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Burean James Taylor J. D. Settle Chamber of Commerce J. W. Pulliant U. S. Weather Bureau Miss Emma Swift Prof. J. S. Stokes J. T. Farrell W. C. Brown Mrs. Abbie Snoddy J. S. Conway L. C. Saeger U. S. Weather Bureau St. Louis University J. C. Jewett Frank Haß Geo. W. Davis Prof. A. W. Ebeling U. S. Weather Bureau
Southeast Lowlands, Campbell Caruthersville Doniphan Jackson Marble Hill Morehouse Poplar Bluff Sikeston Cairo, Ill. Section means and	Pemiscot Ripley Cape Girardeau Bollinger New Madrid Butler Scott Alexander, Ill	314 265 344 428 470 289 329 318 358	2 31 23 36 32 26 23 22 52	41.2 41.8 40.2 38.2 39.1 41.3 38.1 40.0 38.9	+ 2.9 + 2.1 + 2.7 + 3.8 	73 66 68 64 66 71 67 67 71	6 6 11 12 11 11 7 6 11	14 11 12 10 11 14 12 13 10	18 18 18† 18 18† 18† 25 18 18	36 31 42 39 43 41 32 27 43	3.14 2.29 2.97 3.42 3.82 3.37 3.38 2.41 2.58 3.04	$\begin{array}{c} -1.51 \\ -0.18 \\ +0.53 \\ +0.54 \\ +0.11 \\ +0.42 \\ -0.85 \\ -0.64 \\ -0.20 \end{array}$	0.75 0.84 0.75 1.01 1.04 0.79 0.82 0.62 0.83 1.04	0.0 0.0 1.0 3.0 T. 1.0 0.0 0.3 0.6	10 8 8 9 11 8 8 8 8 11 9	14 12 11 10 13 14 14 14 10 12	4 6 10 4 1 2 3 5 4	11 11 8 15 15 13 12 14 13	n. s. se. n. sw. w. sw. sw. s. sw.	Jeff. King Sam Smith W.W. Martin John G. Phtz R.A. DeWitt John A. Spence J. H. Woipers R. B. Drummond U. S. Weather Bureau
Ozark Plateau. Arcadia Aurora Birehtree (near) Bolivar. Dean II Eldon Farmington Goodland Greenville Hailey Koshkonong Lebanon Loekwood Mountain Grove(near) Neosho Rolla Salem(near) Seligman Seymour (near) Springfield Section means and	lron Lawrence Shannon Polk McDonald Miller St. Fruncols Iron Wayne Barry Oregon Laclede Dade Wright Newton Phelps Dent Barry Webster Greene extremes	1,071 1,000 934 918 1,000 381 1,350 958 1,265 1,078 1,463 1,011 1,099 1,173 1,542 1,642 1,324	46 37 32 33 28 31 16 33 5 2 26 39 21 26 39 27 23 25 21 39	35.7 39.7 39.1 40.0 41.6a 36.6b 37.0 38.4 38.6 41.2 35.6 39.4 37.6 40.1 37.9 40.2c 37.5 38.2 38.5	+ 4.7 + 1.4 + 5.5 + 3.7 + 1.7 + 3.9 + 3.8 + 3.5 + 2.7 + 4.0 + 5.1 + 3.0	68 65 69 68 68 65 70 66 65 68 63 67 66 67 66 67 63 70	11 5† 11 5 6 11 11; 11; 11; 11; 11; 11; 11; 11; 11	7 11 10 8 12 6 8 4 10 11 3 6 6 7 8 8 6 9 7 9	18† 18† 18† 24 25 24 24 18 18 24 18 24 18 24 18 24 18 24 18 24 18	444 31 411 333 399 422 400 600 444 355 388 389 299 60	1.48 1.58 2.54 2.61 1.21 1.38 2.38 1.18 2.72 2.15 2.23 1.41 1.57 2.28 1.76 1.64 2.23 2.39 2.14 1.09 1.89	-1.68 -1.24 +0.05 +0.32 -0.62 -0.72 -0.91 -1.310.56 -1.09 -0.40 +0.02 -0.62 -0.70 -0.15 +0.51 -0.31 -1.29 -0.61	0.70 0.49 0.65 1.60 0.52 0.34 0.57 0.85 0.80 0.55 0.42 0.80 0.39 0.55 0.46 0.68 0.68 0.68	T. 1.0 1.0 1.0 T. 0.7 4.5 5.0 0.2 3.0 0.0 0.5 1.0 5.6 4.0 0.5 1.0	6 6 7 4 6 8 10 8 9 7 8 8 8 5 10 7 7 7 9 7 7 5 7	18 10 13 14 18 ^b 6 10 15 13 17 12 14 13 16 17 12 14 12 ^t 12 14 12 ^t 12 13 14 14 14 15 16 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	1 8 4 6 b 1 3 8 1 3 6 6 3 3 10 4 4 5 6 5 5	10 11 12 9 7 ^b 10 11 13 13 6 6 14 12 6 9 9 11 14 7 ^t 10 10 10 10 11 11 10 10 10 10 10 10 10	nw. nw. nw. sw. w. nw. nw. nw. nw. nw. nw. nw. nw. nw	Arcadia College W. T. Troughton V. H. Kirkendall Southwest Baptist College H. E. Dean E. H. Shepherd Robert Forsyth F. M. Adanus Wm. P. Owens A. W. Madison R. M. Ilitt Mrs. Lou Mulcare C. S. Crow Mo. Fruit Exp. Sta. U. S. Fisheries Sta. Prof. Elmo G. Harris A. C. Leech Floyd E. Fawver Ira H. Hailey U. S. Weather Bureau
Southwest Plain. Amoret. Appleton City Centerview Clinton. Harrisonville Lamar Lamoute †† Marshall Nevada Warsaw Section means and	Bates St. Clair. Johnson Henry Cass. Barton Pettis. Saline. Vernon Benton extremes	831 853 872 765 904 980 867 779 862 687	20 33 40 34 50 40 26 38 34 27	38.6 38.0 39.2 34.6 37.6 36.0 37.4 40.4 39.4 37.9	+3.1 + 4.4	64 65 66 66 67 69 67 69 70 70	11 5† 12 12 5 11	8 8 9 2 4 - 2 6 5 - 1 - 2	24 18† 24 24 24 24 18 24 24 24 24	36 31 32 46 35 36 34 34 55 55	2.53 4.10 3.12 2.70 3.53 2.59 2.03 2.44 2.48 2.84	+0.56 +1.97 +1.02 +0.68 +1.30 +0.68 +0.19 +0.36 -0.08 +0.74	1.53 3.25 1.65 1.39 2.20 1.54 0.81 1.75 1.45 3.25	0.5 5.0 3.0 4.0 3.0 1.0 1.0 2.4	10 4 7 6 7 8 6 3 4 6	8 13 9 12 13 8 8 12 10 10	12 5 10 0 5 11 8 ^a 7 8	9 11 10 17 11 10 12° 10 11 11	SW. SW. HW. HW. SW. SW. W. SW.	Andrew Rood W. G. Bigelow E. A. Markey A. E. Derwent, M. D. John H. Patterson Jesse A. Mann J. E. Wheeler Dr. W. H. Black George A. Kamp Everett Martin
Northwest Plateau. Bethany. Chillicothe Conception Edgerton Grant City Kansas City Kidder King City Lexington. Maryville Oregon St. Joseph. Tarkio Trenton Section means and	Livingston Nodaway Platte Worth Jackson Caldwell Gentry Lafayette Nodaway Holt Brichanan Atchison Grundy extremes	688 1, 169 1, 048 967 916 822	38 7 23 38 34 2 42 37 71 19 24	34.8 36.4 35.2 32.2 33.2 34.6	+ 6.9 + 6.7 + 6.7 + 6.0 + 3.6 + 8.2 + 10.7 + 8.2 + 3.8 + 4.2 + 4.7 + 5.9	64 66 65 66 63 66 62 67 66 68 66 64 57 68	11 11 11 11 11 11 12 11 11 11 11 12 11	4 4 2 2 6 6 2 8 8 3	18 18† 18 18† 18 18 18 18 18 18 18 18 18 18	41 46 37 38 37 29 40 34 37 34 30 40 46 60	2.32	+0.17 +0.39 +0.40 +0.28 +0.78 +0.95 +0.77 +0.54 +0.19 +1.81 +0.79 +0.63 +0.19	1.75 1.90 1.03 1.44 1.19 2.00 1.19		6 8 5 8 6 8 7 7 6 8 6 6 7	14 14 11 18 15 10 13 14 15 13 14 14 14 12	4 3 10 0 6 9 6 6 4 4 4 4 4 6 5 5	11 12 8 11 8 10 10 9 10 8 11 11 10 10	nw.	M. H. Moulton Wm. J. Ofenhouse Fr. Adelhefm Iless Fred I. Stiff W. P. Spillman U. S. Weather Bureau Linn Terry D. B. Oliver Miss Carrie Loomis J. R. Brink Mina Wright U. S. Weather Bureau Albert Volker W. H. Estes

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

Reference letters, *, b, *, appearing in the table indicate number of days missing; for example, b, represents two days, etc.

† The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

Reference letters, *, b, *, appearing in the table indicate number of days missing; for example, b, represents two days, etc.

† Post office addresses of these stations are as follows: of Dean, Anderson.

	Daily Precipitation for February, 1928 Day of month.																																
															1	Эау	of mo	nth	l.														al.
Stations.	Drainage- basins.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	5 16	17	18	19	20	21	22	23	24	25	26	27	28	29			Total.
	<u> </u>		1	1							<u> </u>	<u> </u>			1											<u>} </u>	-		<u> </u>		1	1	-
Northcast Plain. Boonville	Missouri						.03						.	.08											.01								1.30 2.35
Brunswick	Grand Chariton Missouri				.35	.10	$ \begin{array}{c} .12 \\ .80 \\ .01 \end{array} $.27	.10					.26	T.			Ť.	Ť.				T.	.10						1.08			$\begin{bmatrix} 2.33 \\ 2.03 \\ 2.10 \end{bmatrix}$
Downing	Mississippi Missouri				.44	.04	.92	.20	.10					.48	.05			.10)					.08	.17								2.41 2.16
Fulton	do				0.1	15	01	41	0.3				1	.18	0.06	• • •	•• •••	т	Į			T	т.	.08	.07		1			.06	3		$\frac{1.03}{2.74}$
Hannibal ^{ses}	Mississippi do Missouri			1	.14	.30	1.31	.50	.05					.21	1 .03 3 .05			.01		Т.	J	:::::	.05	.03									2.02 1.36
Jefferson City## Kirksville	do Mississippi				.37	.05	.85	.20						.] .12	2 .13			T.						,							0		1.60
Lonisiana	Chariton				.03	.50	.23	1.15	.12				.		09					3				.12									$\begin{bmatrix} 2.91 \\ 2.24 \\ 2.22 \end{bmatrix}$
Milan #	Mississippi Grand Mississippi					.20	.50		.15				.	. 15	5 .40 1 .06			····					.25										2.55 2.65
Pacifie	Meramee Missouri					.86	.05	.22	.06	.03	3		.	.10	0 .15				1	1			Ť.	18 T.	.04					.60	5		$\frac{1.69}{2.19}$
St. Charles	Mississippi				1.02	.04	.25	.13	.03				.	. 52	5 5 T. 2 T.			T.				Ť.	.18	.05						.72	8 2		2.43 2.99
Shelbium	dodo		:		.35	;80 T.	.08	.35	.10					.4() T.			T.	.05	5			.07	.07									2.55
Unionville	Chariton			l	.35	.04	1.05	.35	.08	.04	ļ			. 75	30			10	Ť.					.20					1				$ \begin{array}{c c} 1.61 \\ 3.26 \\ 1.70 \end{array} $
Warrenton Keokuk, la. ***	Mississippido			T.	.60	Ť.	.07 .73	Ϊ.						.30	.01			.04		Γ.		T.	.02	.07		T.					6		1.75
Southeast Lowlands Campbell!	St. Francis				.49	.17	.42	.15						.27	.17			.25	j				.44	.75	l					.10	0		3.14
Cape Girardeau Camthersville	Mississippi		: : : :			.25	.02	$\frac{1.10}{.84}$.04			:::		.10	3 .18). (01	.18	.04	i	: : : :		.14	.48	.68								$\begin{array}{ c c c c c }\hline 3.44 \\ 2.29 \\ \end{array}$
Dexter				1		.76 .55	.05	.63				:::		.12	6 .14			.25	· · · · ·					.75			,			T	8		3.39
Jackson	Mississippi				.10	.15	.10	.52							0 .48	Ŋ.,,	32	.24	1		.}		.32	1.04						.30	$0 \dots$		3.42
Norehouse New Madrid Poplar Bluft	do					.70		.80	.01					.12	2 .2	3		.10	.10)			.11	.41	.81	1							3.37 3.39 3.38
Sikeston Cuiro, Ill.	Mississippi						.53	.36						.10		Ť	T.	.13	3			16		.38	.62						· · · · · · · · · · · · · · · · · · ·		$\begin{array}{c c} 2.41 \\ 2.58 \end{array}$
Ozark Plateau.	00			••••	.14	.00	.50	.01	.01	•••				1.1	.10	1		.20	1				.01	.00						.1.	1		2.00
Arcadia #								3	.28 T.					.0				.06 T.	T. T.			т.	. 05 T.	.26	Т.	T.		1					1.48 1.58
Birchtree (near) Bolivar	Black Osage	::::					$\frac{.35}{1.60}$				· l			8	63 5			†13	3	:::			.50	.10						ή.	5		$\begin{array}{c c} 2.54 \\ 2.61 \end{array}$
Caplinger Mills	Neoslio				.26		1.29 .52 .07	.06	T.					30	0			.14	.01				Т.	ή. ²¹		Ť.				0.0	4		2.47
Eldon					.12	.11	.30	.04						3:	2 .5	7		.04	1				.28	.23						. 3'	7		$ \begin{array}{c c} 1.38 \\ 2.38 \\ 2.30 \end{array} $
Galein Goodland						.36	.25		.10					13	[5] $.32$				5					.35							5		1.53
Greenville	St. Francis				.14	.15	T.							2	7 .20	5		.24	0.08				.29	.85	.10	T.				2	2		$\frac{2.72}{2.15}$
Koshkonong Lebanon	Black Osnge				.18	.09	.34		.16	Ť.				2	$\begin{array}{c c} 0 & .23 \\ 1 & .13 \end{array}$	3		.28	5				39	.55						T.			2.23 1.41
Lockwood Momitain Grove!!	White	: :::			.25	.28	.80	.05	.04	Ť.				29	6 .5	l		.10)					.30	Ť.	T.							$\begin{array}{c c} 1.57 \\ 2.28 \\ \end{array}$
Neosho Owensville II Rotta III.	Gasconade				.40			.27	.12	.13	2				3	3	T.																$ \begin{array}{c c} 1.76 \\ 1.24 \\ 1.64 \end{array} $
Salem (near)	do				.63	.06	.31	.07	T.				10	99	g Tr	11.		0.	1		1		1 19	18				1		.5	$\begin{bmatrix} 0 \\ 4 \end{bmatrix} \dots$		2.23
Seymour (near) Springfield ***	White			Т.	.43	.58 T.	.27	т.	T.				T.	. 4	2 .2			T.	.08 T.	5		T.	T. T.	.31		T.	1			T.	i		2.14 1.09
Stoelville	Meramee Missouri				1 . 10	. 41	.00	. 40						1/4	0 . 13			1 .						. va									1.17
Tuscumbia	Osage				Т.	.26		.61	.04	Т.			: ::::	.13							:		Т.		.15						:::::		1.36
Southwest Plain.	Omm										1																						
Amoret	do				10	.01	1.53 3.25	.01	.01					.54	1.10			.05 T .	T.				T.	.13						,05 T	5		2.53 4.10
Concordia III	Osage Missouri				.10	.14	1.65	05 1.46	.10					.52	2			Ť.						.30						.40			3.12
HarrisonvilleM Joplin*. Lamar M	Osuge	1			1 1	. 12	.35	1.39	. 09					36	3									39								1	2.70
Lamar III	Missouri				.09	.34	$\frac{2.20}{1.54}$.06	.05					.28	.12				Т.					T.	.12			••••		.15			3.53
Lamonte	Osage				T.	T.	1.75	.59	1.					.57	T.			····	Ť.			••••	Ť.	.12						.04	••••		$\begin{bmatrix} 2.03 \\ 2.44 \\ 3.11 \end{bmatrix}$
Osceola Warsaw Waverly II	do Missouri			Ť.		.12	1.45	Ť. 1.71	.03					.65	19				····					.08						.30			$\begin{bmatrix} 3.11 \\ 2.48 \\ 2.78 \end{bmatrix}$
																				4													
Northwest Plateau. Albany	Grand				 .13	Ť.	i.07	1.08	.45					.40	1°.			.05					$\dot{\mathbf{T}}^{02}$.02		·							1.95 1.61
Conception	Missouri					.19	.90	.16	.22	T'.				.17	.26 T.	• • • •		.01 T.	Т.				Ť.	.20									2.40 1.59
Gallatin II	Grand			- 1	.00	Ť.	T.	1 60	T.	.01				.20	26			$\hat{\mathbf{r}}$	T				1 1	.00									1.73
Grant City Kansas City*** Kidder #	Missouri				.06	Ť.	$\frac{1.11}{2.04}$.07	.04					.39	.00	Ť		Ť.					.02	.17									$ \begin{array}{c c} 1.90 \\ 2.77 \\ 2.29 \end{array} $
																																	2.29
Maryville II Oregon	do				T.	Т.	1.03	.85	.18					.13	T. T.			Т.						.03 T.				• • • •					2.22
Lexing City Lexingtou Maryvitle [] Oregon St. Joseph*** Tarkio Trenton	do				Т.	Т.	$\frac{1.19}{2.00}$.05	.08				.01	.22	T.			T. T.					.10	.04									$\frac{1.69}{2.88}$
Trenton	Grand	••••			.29	.13	1.19	.20	••••				• • • • • •	.39	.03	1	•	.03	••••		• • • • •		T.	.06									2.32
			1		1																												
		1												1).		

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation.

*** Regular U. S

*** Weather Burean station; precipitation is for 24-hour period, midnight to midnight.

*** Precipitation in the next following measurement; separate dates of fall not recorded.

*** Precipitation is for 24-hour period midnight.

						Da	ily	Ter	npe	rati	ures	fo	r F	ebr	uar	y, 1	1928	8												
Stations.	1	2	3	4	5 6	3	7	8	9	10	11 :	12	13	14	15	16	17	18	19 2	20 2	21 2	2 2	3 2	14 2	25 5	26	27 2	8 2	29	Менн
Northeast Plain.																							Y			1				1
Brunswick W) Maximum	35 16	16	58 25	56 31	37	52 37	38 37	37 32	35 31	56 26	54 27	65 32	38	33 ¹ 29	39 27	44 26	31 25	30	51	22	22	25	15	28 12	32 12	46 15	25		48 .	43 7
Columbia Minimum	37 20	24	61 39	56 53	39	56 39	52 35	37 32	35 31	57 26	61 34	66	38	38 29	35 29	41 26	36 10	20		32 23	25		14	27 7	28 11	44 19	49 31		47 .	45.2
Fayette	39 14	16	61 25	56 30	37	53 35	41 38	41 31	36 29	59. 24	65 26	63 29	50 32	45 27	39 26	45 23	35 27	33	51 8	36 20			37 14	32 4	31	44 13	54 18	59 22	49 . 31 .	46 5
Hannibal Maximum Minimum	34 18		58 35	56 52	52	51 33	51 38	38 36	35 31	55 29	53 36	61 36	48	45 32	37 31	41 30	34 12	21	47	29, 21	41	44	16	27 13	25 14	45 19	50 32	51	45 .	43.8
Jefferson City & Maximum	35 20	57	63 26	57 38	50	59 39	44 42	38 33	36 30	59 26	65 30	67 36	50 38	37 31	37 31	43 26	43 28	30	48	37			26 = 16	29 6.	35 13	48 18		66 29	45 33	. 46.6
Kirksville Maximum	36 14		58 29,	55 47		40 32	45 32	34	34 29	54 26	56 31	62 29	49 39	44 29	37	42,	37 13 ₁	20	46 12	37	37		42. 10	27 9	29	46 16		54 30	46 .	43.7
Louisiana	38 18	48	58 29	57 45	54	48 36	53 42	47 34	38	55 28	56	60 34	60 38	52 32	48 32	40 26	40, 25	50	50	45	40	42	42 18	30	28 12	42 11	48	55 25	55 .	47.6
Maconss	34 10	52	61 27	57 34	37	48 33	4I 35	36 31	37 30	55, 26	59 30	66 33	47	33 28	40 27	43 24	33 27	29	52 5	32	43	47	25 12	30	29	46 16		56 20	47 35 .	4.5.7
Mexicoss Maximum	36 18	53	61 25	56 37	39	57 36	44 37	37 33	36 31	58 29	57 32	66	48	33 30	89 30	48 27	36 28	27	48	35	47	46		31	30 10	45 14	51	59	48 .	44.8
St. Louis(1)	37 21	51	61 38	55 49	53,	54 37	57	41 35	37 32	56 30	5.1 41	35 59 37	48 42	47 33	36 32	42 31	42 17	24 11	47	36	36	12	43	30 16	27 16	45 19	51	62	47 32 .	45.5
Unionville	40 10	50	60 24	57 45	50	38 32	43 33	36 32	34 30	54 27	56	62 31	55	43 28	38, 22	38	37	20	4:3	38	37	46 34		24	30	47 15	50	50	47 .	43.7
Warrenton Maximum	37 17	55	61 34	55 48	54	43 37	56 41	43 33	37 30	59 26	59	65 35	62	47 31	35 30	41 25	40 22	24	49	4.1	41	44	42 16	27 7	28 10	46 16	50	62	56 . 32 .	47.0 26.9
Southeast Lowlands. Campbell	43		61	62		73	61	53	45	55	- 1	66		53	40	50	45	38		48				47	42	44		63	58	52 3
Caruthersville Maximum	24 36	18	25 64	44 60	53 .	50 66	48 66	4I 53	32 45	23 50	32 57	32 58	45	36 52	26 39	28 45	32 45	14 41	15	28	25	29	28	18	23 31	24 37	25	27	32 57	50.2
Doniphan	34 43	27	33 56	46 66	53	51 65	53	45 49	38 48	29 62	38 68	41 65	47	39 56	30 40	33 46	35 431			31	29	41	30:		25 40	22 45	27	32	37 51 .	34.4 51.6
Jackson Maximum	22 39	17	22 57	40 59	53	48 61	47 61	40 52	38	21 52	28 60	33 64	46	35 52	35 39	26 47	30	12 39	12	21		35	29 45.	15 38	16 31	15 34		22	33 .	136. 6
Poplar Bluff Minimum	22 49	13	23 61	41 63	42	41 65	48 61	38 50	32 50	25 62	31 71	31 68		33 49	28 39	25 52	30. 46	10 39		25 53	19	30;	22	12	19 42	15	24	23	30 .	27.2 53.2
Sikeston	23 38	15	24 47	35 61	53	48 53	49 67	42 62	33 43	22 39	30 53	33 61	46 63	35 51	31 41	27 39	32 49	14 43	14	21 44	26	35	29 46	44 17 46	23 31	46 17 37	23	23	33 .	29.4
Cairo, Ill	26 36	19	21 61	29 64	45	46 67	47 62	42 49	37 41	26 51	27 59	34 62	37 52	39 49	29 38	30 45	31 42	13 26	13 42	22 40	24.	26	48	17 30	12 30	18 39	22 52	27 59	441	. 28.5
Ozark Plateau.	28	24	37	47	49	46	49	41	35	31	40	39	46	36	34	33	23	13	20		27				21	18	30	33	32 .	32.4
Arcadia\\\\	42 21			56 34		59 41	54 41	38 36	36 31	59 23	68 24	53 29	49 30	35 33	34 31	47 25	41 25:	28 7	50 7	42 17		44 22	33	35 11	33	47 13		63 21	42 . 24 .	46.9
Aurora) Maximum Minimum	42 25	57	60	58 52	65	63 54	59 37	39 34	41 30	55 28	65 36	60 39	56 43	46 27	39 23	39 25	36 21	24 11	48	42 24	48	53	47	30	33	45 22,		64 33	54 . 35 .	49.0
Birchtree Maximum Minimum	41 24	53		59 43	64	60 49	59 43	43 36	43 32	59 23	69 37	65 37	39 45	48	35 31	46 24	41 27	27 10	50 11	44	39	43	44	34 10	35 18	46° 15		64 23	55 . 32 .	49.8
Eldon M	38 21	56	62	56 35	55 52	60 42 55	44	35 35	35 31	59 24	68 26	67 34	46 34	32 31	31 31	43 27	38 27	25 8	48	38	45	25		48	32	47 15	20		46 · 30 ·	¹ 47.0 ² 26.1
Farmington Maximum Minimum	35 23	52 16	35	58 34	40	40 .	54 43	43 36	36 34	57 24	62 40	65 34	53 41	48 32	33 31	45 24	40 26	26 9	50 10	21 42 24	37	30	21	30'	29 17	46 13	53(27	63 ₁ 25 64	53 · 32 · 57 ·	46.9
Koshkonong) Maximum Minimum	45 30	25	37	61 48	52	59 52	59 44	45 38	48 35	58, 26	70 39	68 39	58 46	48 32	36 25	47 21	42 27	28	51 15	45 28		36	26	36, 14	36 20	47 19	29	35	35 .	51.1
Lebanon Maximum Minimum	38	$\frac{56}{21}$	59 28	58 40	65 51	62 47	44 39	38 32	39 28 47	57 23	66 27	64 33	49 36	33 28	35. 27	43 21	37 21	27 6	47	39 19			21	30,-	31	45 = 13	23	63 29	34 .	${25.1}$
Mountain Grove M Maximum	46 23	22	31	60 39	48	58 51	43	40 32	47 27	60	68 33	67 38	51 43	35 28	$\frac{40}{27}$	45 22	40 23	28 7	52 8	44 22	45	26	31 20	31	31	46 11	27		34 .	48.4
Neosho	39 25	21	35	59 54	62 56	63 53	63 37	40 36	43 25	56 22	63	63 31	58 41	58 28	41 20	41 22	391	26 12	48 16	51 24		41	58 18	8	37 11	46 18	29	25	36 .	51.9 28.8
Rolla j Maximum ! Minimum	44 22		36	50	58	59 42 61	58 38	40 33	36 29	56 23	28 67 36	62 38	62 43	48 32	33 29	43 22	39 22 33	23 6	48	45 20	22		24	30	31	46 18	28	58i 30 _i	32 .	47.9
Springfield) Maximum (Minimum	39			56 53	63 53	61 54	54 36	37 33	38 29	55 29	63 40	59 42	48 36	36 27	38 25	38 25	33	23	46 18	39		46' 38		29	3! 17	43 23		62 34	(313	46.3
Southwest Plain. Amoret																														
Appleton City Maximum	40				58	64	56	38	40	61	64	63	55	42	36	44	37	26	50	43				32	34	45	55	63	50	1 1. 48.5
Centerview Maximum	20 34	1 42	52	50 60	48 56	46 58	36 58	34	30 44	28 59	33 65	36 65	42 68	28 48	30 42	26 48,	23 28 19	33	19 50	21 46	25 45	36 50		301	15 31	42 42	29 51	50		1 1 47.5
Clinton J Maximum	18	2 52	56	61	60	41 62	34 57 37	28 47	29 51	39 59	51 59	40 66	37 57	37 47	28 49	28 -16	10	8 25	24 48	21 45	24 45	36 52		31	11 32	18 45	53	34 52	28 . 52 .	28.8
Harrisonville M) Maximum	37	7 54	56	59	39 50	46 58	38	36 37	36 41	31 61	34 66	34 63	42	30	31 42	28 45	20 31	10 30	24 53 7	23, 36,	41	30 50		33	15 36	23 45	54	31 61	35 ₁ .	25.6
Lamar//	39	55	59	61	48 67	39 67	33 43	32 40	28 43	25 ₅	26 64	33 63	38 48	26 34	27 42	22 42	28 33	7 29	48,	16 37	21 51	26 57		$\frac{2}{30}$	6 35	12 44	55	64	45 .	23.
Lamonte	37	7 53	58	59	52 56	52 57	38 50	36 37	31 36	27 58	30 66	33 69	37 52	29 42	24 38	26 43	33 27 35	13 24	13 49	25 37		32 51		29	5 32	15 44	23 52	29 57	51 .	27 7
Marshall) Maximum	53	3 .	58	58	39 54	39 51	34 50	31 37	26 36	25 56	30 64	35 67	39 64	28 45	29 38	24 41	15 38	23	16 48	20 45	21 44	48 34		33	31	14 45	27 53	28 57	50 .	25.0
Nevada Maximum	19) 55	33 59	62	39 69	39 61	37 55	32 40	30 41	26 61	82 65	33 63	43 56	28 42	30 42	24 44	20 39	6 28	15 50	21 44	25 45	38 54		31	10 36	17		28 66	59	27. 1 50. 2
Warsaw Maximum	25	5 55	61	67	54 62	51 63	36 60	35 54	31 43	28 65	34 70	38 66 ₁	41 63	28 50	35 43	26 42	25; 39	11 39	21 48	23 47	26 44 22	37 48 25		54	15 32	23 45	29 52	34 62	54	51. 9
Northwest Plateau.	20	1			49	45	37	35	31	25	31	29	44	30	31	25	22	. 9	12	50		- 1	15 -	- 1	12	17	31	24		26 9
Chillicothe M Maximum (Minimum	37	14	26	28	37	47 34	36 34	36	36 29	55 26	65 28	66 31	47 36	33 26	48 25	43 26	23	29	50	34 18	41 19	48 21 47	10	29	10	49 11 50	52 21 51	54 28 52		22.0
Grant City	41 I4	1 22	22	47	54 33 56	37 33	39	35 32	38 28	55 30	63 33	63 35	54 33	33 24	38	39	34	33	15	34 15	38 23	47 31	7	22	33 10	50 21	51 23 53	52 30 55	43 27 47	23.3
Kansas City J Maximum Minimum	37	1 28	40	55	37	52 37	49 33	38 32 95	28	58 34	66	64	45 32	35 28	30	43 28	33 12	24 8 28	52 23	33 23	42 25	51 27	27 12	28 16 24	35 17 31	47 25 47	20 20 50	40 52	31 45	23.3
Kidder W J. Maximum Minimum	3:	11	20	27	36 34	33	35 32	35 31	38 27 37	54 27	62 28 66	62 33	45 36	32 25	39 23	41 22	29 22 37	28 3 26	46.	30 17	18	47 18	9	8 30	8	9 47	18 54	24 56	27	20.9
Lexington J Maximum / Minimum	12	24	31	51	57 37	52 37	51 35 39	36 32	30	58 29	34	67 38	57 40	41 29	42 30	47 20	19	7	52 18	40 22	42 24 20	51 36 45	47 43	14	33 12 35	20 52	30 53	35	39	27
Maryville J Maximum (Minimum	11	22	25	49	56 34	37	32	39	41 27	57 29	66 32	64 36	57 32 53	32 24	22	41 22	37 11	24	46 15	37 16	39 23 10	45 35 45	7	25 7 26	8	52, 18 51	25 55	34 55	33	21.6
Oregon J Maximum Munimum Maximum	143	1 22	31	51	55 36	43 35	43 32	43 32	45 28	59 31	68 36	65 40	32	32 26	44 26	44 24	36 12	26 5 23	19	38 20	40 25	38	42 8	10 25	37 11 89	22 49	52 52	34 53	34	26. 43.
St. Joseph	16	; 28	28	51	51 36	37	39	30	42 29	56 32	66 37	64 41	50 30	32 27	40 28	41 26	34 12	23 7 19	48 22;	30 22	41 26 30	47 20 46	22 10 40	12 21	82 15 30	22 44	28 45	35 50	29	26. 41.
Trenton	30 18				54 34	31	38	36 34	35 31	50 26	54 34	57. 38	55 42	46 27	36 22	35 24		4	38 15	34 18	39 20	46 33	10	9	8	18	28	32	1313	25.
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^{*,} b, *, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

Instruments are read in the morning: the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

WBO, St. Louis, 3-23-28-915.

CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION. GEORGE REEDER, Meteorologist.

Vol. XXXII. COLUMBIA, MO., MARCH, 1928. No. 3.

GENERAL SUMMARY.

March, 1928, in Missouri, was an outstanding March for small rainfall, lack of snowfall, and bright sunny weather. There were some temperature contrasts, but the month was mainly mild. The first five days were the coldest of the month and were characteristic of the usual March. Immediately following upon this, a mild spell prevailed up to the 14th; and then a summer-like spell was general from the 21st to the 25th. The month ended with the night temperature approximating freezing values, but days moderate.

There was a noticeable lack of precipitation across the central part of the State on both sides of the Missouri River, a section varying between 60 and 120 miles, where, as a rule, less than eight-tenths of an inch fell as a total for the month, some stations reporting this the driest March of record.

Over most of Missouri the snowfall was unusually light, but over a large part of the Ozark Plateau there was a heavy fall of snow on the 15-16th, the beginning of the storm being a mixture of rain, sleet and snow. Twenty-four hours after the storm there was very little snow left on the ground. Apparently there was little interference with business and traffic, but winter grain and the soil generally was benefited by the moisture.

The month was exceptionally favorable for outdoor work in all sections. A large seeding of oats was accomplished, and much plowing was done for corn. Some local planting was done in the more southern counties. Potato planting was much increased over the usual. Fall sown grains did well. Much late sown wheat was winterkilled by a cold snap in December and about the first of January when subzero temperatures obtained.

TEMPERATURE.

The monthly mean temperature for the State, as determined from the records of 67 stations, was 46.3°, 2.5° above the normal, and approximately the same as March, 1927. In the southeastern lowlands temperatures averaged slightly below the normal and there was only a slight excess in the Ozark Plateau, while in the other three divisions the excess averaged about 4°. There were three cool and three warm spells during the month, the warm ones being somewhat more marked and persistent than the cool spells. From about the 21st to the 24th, inclusive, summer like weather prevailed, the afternoon maxima ranging from 85° to 89°. The first five days of the month were the coldest, when the minima ranged from about 10° above zero in the northern counties to 20° in the southeast. The average number of days with minimum temperature 32° or lower was 18.

PRECIPITATION.

The monthly precipitation, based upon the records of 99 stations, was 1.54 inches, and about 1.46 inches less than the 56 years' average. The precipitation was deficient in all sections. In the northern tier of counties from about Worth and Gentry east to Clark and south to Audrain the total monthly fall was about one-third of the normal; over the southern third of the State from west to the east line the total amounted to about two-thirds of the normal. In all the remainder embracing the central portions the moisture was very scanty, the totals for the entire month being generally less than eight-tenths of an inch. The greatest monthly fall was 3.56 inches at Bolivar, and the least, 0.11 inch, occurred at Lamonte. The greatest 24-hour amount was 1.60 inches, at Lebanon on the 16th.

A heavy snow fell over the Ozark region from Dade to about Madison County on the 15-16th. Rolla with 14 inches, Steelville 11.5, Springfield with 9.8, and Lebanon and Lockwood with 8 inches, were the heaviest amounts. All had melted in about two days. In general the snowfall of this March was unimportant from the economic point of view, the ground being bare during the coldest periods, as well as most of the month.

MISCELLANEOUS PHENOMENA.

Anrora.---At Tarkio on the 2d, and Hailey on the 14th. Fogs, dense,---11th. 25th, and 26th. Hail.---Small hail without damage at five or six widely separated

points on the 25th.

Halos, lunar.---12th, 24th, 25th, and 29th.

Halos, solar.---3d, 5th, 10th, 11th, 12th, 14th, 16th, 17th, 18th, 25th,

and 30th.

Sleet.---In the Ozarks from Barry County eastward to New Madrid---a mixture of rain, sleet and snow---on the 15th. No damage or interruption of business of traffic reported.

Thunderstorms.---Local thunder on the 8th, 11th, 12th, 15th, 26th, 28th, and 29th. General on the 4th, and 25th.

Although winds were brisk to strong generally on the 16th. 19th, 26th, 28th, and 29th, the month was free from any damaging storms.

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA

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	essure).	rela	ean itive idity.	Suns	hine.		V	/ind.		
	an y pr			rs.	le.	es.	our.y.	Max.	veloci	ty.
Stations.	Mean barometric p	7 8. m.	7 p. m.	Total hours.	Percentage of possible	Total move. ment, miles.	Average hould be a velocity	Miles per hour.	Direction.	Date.
Columbia. Haunibal Kansas City St. Joseph St. Louis Springfield Cairo, Ill Keokuk, Iowa	29.99 30.00 29.99 29.98 30.00 30.00 30.02 30.02	75 73 72 75 79 78 79 76	48 48 43 65 52 58 51	262 291 260 216 262 254	71 78 70 58 71 68	6,230 6,761 7,744 6,219 8,729 7,275 7,028 5,711	8.4 9.1 10.4 8.4 11.7 9.8 9.4 7.7	32 25 37 30 36 34 33 25	nw. ne. nw. nw. nw. se. nw.	26 29 26 26 26 28 26 12

Beginning January 1, 1928 wind velocities are by 3-cup anenometers.

COMPARATIVE DATA FOR MARCH.

		l'empera	ture.			Precipita	tion.		Nui	nber	of da	ays.
Year.	Mean.	Departure.	Highest.	Lowest.	Mean.	Departure.	Greatest in 24 hours.	Total snowfall, unmelted.	With .01 inch or more.	Clear.	Partly cloudy.	Cloudy.
1888	38.5 44.3 37.3 38.9 40.5 40.7 40.4 40.4 40.4 40.4 41.8 41.8 41.8 41.8 41.8 41.8 41.8 41	-4.8 +1.0 -6.0 -6.7 -4.4 -2.8 +4.4 -0.9 +0.9 +1.4 -4.1 -1.9 -0.6 +2.0 +1.5 +1.5 +1.5 +1.5 +2.0 -8.7 +10.6 +1.2 +12.5 -8.1 -3.9 -1.3 -9 -8.7 +1.4 +1.2 +1.2 +1.2 +1.3 -1.3 -1.3 -1.3 -1.3 -1.3 -1.3 -1.3 -	90 90 94 76 86 87 88 88 89 98 88 88 88 88 88 88	1 13 -11 -11 -11 -11 -11 -11 -11 -11 -11	1,98 2,61 3,11 2,86 3,11 2,14 2,14 2,14 3,49 3,49 2,18 4,14 4,14 2,19 4,16 4,16 4,16 4,16 4,16 4,16 4,16 4,16	+1.11 -0.93 -0.30 +0.10 +0.20 -0.05 +0.02 -0.77 -0.86 +3.16 +4.18 +0.02 -1.43 +0.83 +0.58 +0.44 +1.23 +0.10 -0.33 +0.16 -2.25 -1.06 +1.71 -1.74 -1.74 -1.74 -1.74 -1.74 -1.75 -0.65 -0.69 +1.70 -0.65 -0.69 +1.71 -1.71 -1.74 -1.74 -1.74 -1.74 -1.75 -0.41 -1.75 -0.41 -1.71 -1.74 -1.74 -1.75 -0.41 -1.75 -0.41 -1.75 -0.41 -1.75 -0.41 -1.75 -0.41 -1.75 -0.41 -1.75 -0.41 -1.75 -0.41 -1.75 -0.41 -1.75 -0.41 -1.75 -1.46	2.15 3.20 3.00 3.44 4.10 3.87 4.30 3.41 5.60 9.2.67 3.30 2.65 3.30 2.2.65 3.30 2.2.65 3.30 2.2.65 3.30 2.2.65 3.30 2.2.65 3.30 2.2.65 3.30 2.2.65 3.30 2.2.65 3.30 3.41 4.45 4.45 4.45 4.45 4.45 4.45 4.45 4	5.7 7.1 3.2 4.4 4.5 2.2 1.0 0.6 8.9 0.2 1.1 1.2 1.1 1.2 1.0 0.6 4.7 7.3 1.5 5.0 4.7 9.3 1.1 1.4 10.7 9.3 1.5 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3 9.3	10 5 8 10 8 7 6 6 9 8 2 2 11 16 6 8 9 8 8 9 8 8 11 7 7 7 6 6 2 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	 8 11 15 14 11 19 15 11 10 10 11 11 11 11 11 11 11 11 11 11	 100 100 9 9 7 7 9 9 9 7 7 7 7 9 9 8 7 7 7 7 7 9 8 6 6 8 8 7 7 8 8 6 6 8 8 8 6 6 8 8 9 6 6 6 8 8 8 6 6 8 8 9	13 10 10 11 13 13 11 17 12 11 11 11 11 12 18 10 10 9 4 4 4 7 13 11 11 11 11 16 9 9 7 7 8 10 9 14 11 15 6 6 12 11 7 7

					Cl	imate	ologic	al D	ata f	or D	Iarch	, 1928	3							
			ď,	- 1	l'empera	ture, li	n degr	ees Fa	dir.	_	Preci	pitation	.In In				ofd	lays.	tion	
Stations.	Countles.	Elevation, feet.	Length of record, years.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	With precip.	Clear.	Partly cloudy	Cloudy.	Prevailing direction of wind.	Observers.
Northeast Plain. Brunswick Clifton Hill Columbia Downing Fayette Fulton Gorin Hannibal Jefferson City Kirksville Louisiana †† Maeon. Mexico. Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Unionville Warrenton Keokuk, Jown. Section means and	Chariton Randolph Boone Sehuyler Howard Callaway Scotland Marion Cole Adair Pike Macon Andrain Monree St. Cluries St. Louis Citydo Shelby Lewis Putnan Warren Lee, In extremes	876 661 818 700 534 557 969 469 875 800 748 456 568 578	48 28 37 6 47 39 40 35 39 38 33 28 33 15 34 29 34 45 55	44.8 43.9 46.0 44.0 43.5 44.8 44.0 46.8 43.2 46.0 46.0 44.3 45.3 46.0 46.0 45.1 44.6 43.2 46.9 42.6 44.8	+ 3.0 + 1.7 + 3.4 + 1.4 + 0.4 + 0.4 + 3.6 + 3.7 + 1.7 + 1.7 + 1.6 + 1.9 + 1.5 + 1.8 + 1.9 + 1.5 + 2.2 + 4.6 + 4.7 + 3.7 + 3.7 + 3.7 + 3.7 + 3.8 + 3.8	89 86 83 81 89 82 82 82 82 84 84 81 88 88 83 81 89	222 23 222 233 222 231 23 222 23 23 23 23 23 23 23 23 23 23 23	15 13 18 12 14 17 17 17 17 13 16 19 20 20 10 16 15 10	555555 ;5555555 ;155 ;555555	54 49 41 40 59 35 37 45 49 44 50 43 30 30 30 41 36 35 59	0.17 0.47 0.69 1.67 0.73 0.70 1.27 0.93 0.55 0.97 0.81 0.69 1.56 1.47 0.92 2.27 1.84 1.10 1.25 0.87 1.39	-2.39 -2.18 -2.34 -2.39 -2.08 -2.34 -1.19 -1.89 -2.27 -1.80 -2.09 -2.09 -2.09 -1.23 -2.11 -1.11 -1.75 -1.66 +0.11 -2.59 -0.99 -1.70	0.07 0.18 0.48 0.70 0.31 0.33 0.28 0.20 0.42 0.30 0.21 1.00 0.97 0.50 1.28 0.96 0.46 0.50 1.05 0.42	0 0.2 0.3 2.0 1.6 1.8 0.8 2.0 2.0 0.5 0.5 0.5 0.5 2.0 2.0 2.0 3.5 7.	43654769534565465657675	19 14 11 11 17 10 21 11 19 22 20 21 18 7 13 13 13 13 11 11 11 11 11 11 11 11 11	1 10 12 9 18 8 13 5 22 7 6 0 9 9 16 11 12 12 9	11 7 8 5 12 8 8 7 5 10 4 4 8 7 5 9 4 12 7	ne. 5. nw. 5w. n. nw. 6w. y. sw. n.	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Bureau James Taylor J. D. Settle Chambler of Commerce J. W. Pulliam U. S. Weather Bureau Miss Emma Swift Prof. J. S. Stokes J. T. Farrell W. C. Brown Mrs. Abbie Snoddy J. S. Conway L. C. Sueger U. S. Weather Bureau St. Louis University J. C. Jewett Frank Hull Geo. W. Davls Prof. A. W. Ebeling U. S. Weather Bureau U. S. Weather Bureau
Southeast Lovilands. Campbell Carrathersville Doniphan Juckson Marble Hill Morehouse Poplar Bluff Sikeston Calro, Ill. Section means and	Dunklin Pemlscot Ripley Cape Girurdenu Bollinger New Madrid Butler Scott Alexander, III extremes	314 265 344 428 470 289 839 318 358	2 31 23 36 32 26 23 22 52	47.6 50.0 47.6 46.4 49.0 49.4 47.6 48.2	+ 1.2 - 1.8 - 0.8 + 1.6 + 0.6 - 0.4 - 0.2	82 80 80 84 89 79 89	22 22† 22† 22 23 22 23 23	23 27 21 20 21 21 21 24 20	5† 5 2† 1† 5 2	42 36 53 44 45 47 33 53	2.48 2.33 2.04 1.80 3.10 2.22 2.07 1.23 2.16	-1 67 -1 55 -2 54 -1 08 -2 28 +2 45 -2 52 -2 01	1.15 0.80 0.80 0.86 0.65 1.08 0.88 0.65 1.15	0 0 3.0 0 T. 0 0.1	8 6 6 8 7 9 6 7	9 18 14 7 12 15 13 7 12	16 5 11 10 8 7 10 8	6 7 6 14 11 9 8	n. s. sw. n. n. w.	Jeff King Sam Smith W.W. Martin John G. Putz R.A. DeWitt John A. Spence J. H. Wolpers Carlos W. McKintey U. S. Wenther Burean
Ocark Plateau. Areadia Aurora Birchtree (near) Bolivar Dean 11 Eldon Farmington Goodland Greenville Halley Koshkonong Lebanon Lockwood Mountain Grove(near) Neosho Rolla Salem(near) Seligmun Seymour (near) Springfield Section means and	Laclede Dude Dude Wright Newton Phelps Dent Barry Webster	934 918 1,000 381 1,350 958 1,265 1,078 1,463 1,011 1,099 1,173 1,542 1,612 1,324	46 37 32 33 28 31 16 33 5 2 26 39 21 26 39 27 23 25 21 39	44.2 48.4 46.9 49.4 50.2 45.2 45.2 45.2 44.2 48.3 46.6 48.6 46.8 45.2 50.8 46.8 47.0	$ \begin{array}{r} -1.2 \\ +0.4 \\ +0.6 \\ +0.4 \\ +1.8 \\ -1.7 \\ +4.6 \end{array} $	844 81 80 82 85 82 84 82 80 81 77 78 80 77 78 85 85	22 25 22† 25 25 22 22 22 22† 22 25 28 22† 25† 22 22 25† 22 25 25 22 25 22 25 25 25 25 25 25 25	15 19 18 20 20 18 19 13 18 21 14 18 20 16 13 19 16 19 13	18 5 5 5 5 2 5 1 1 5 5 5 5 5 5 5 5 5 5 5 5	55 41 41 41 46 48 44 52 48 50 48 46 45 38 39 51 36 55	2.00 2.66 1.93 3.56 2.79 0.64 2.07 1.55 2.26 2.77 2.37 2.44 2.25 1.80 2.49 2.49 2.25 2.36 2.21	-2.07 -1.02 -2.32 +0.52 -0.56 -2.19 -1.24 -1.99 -1.11 -0.89 +0.81 -1.97 -1.03 -1.34 -1.50 -1.45 -2.09 -1.71 -1.31	1.22 1.35 0.87 1.56 0.30 0.86 1.27 0.80 0.76 1.60 1.47 0.68 1.15 1.20 0.75 1.06 0.75 1.06	5.0 5.5 3.0 2.4 1.5 5.3 7.5 6.0 T. 5.0 8.0 4.5 3.0 14.0 6.6 T. 9.8 4.9	5 4 6 6 4 3 7 6 6 7 3 6 6 6 5 8 5 6 6 6 4 3 10 6	25 19 18 23 21 7 11 16 14 23 11 16 18 12 20 21 15 13 19 21	0 7 7 3 3 18 16 10 11 5 5 8 7 10 5 6 6 6 8	6 5 6 5 7 6 6 4 5 6 3 3 3 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	nw. sw. sw. sw. ne. n. ne. nw. e. nw. se. nw. sw. w. nw. sw. sw. sw. sw. sw. sw. sw. sw.	Areadia College W.T. Troughton V. H. Kirkendall Sonthwest Baptist College H. E. Denn E. H. Shepherd Robert Forsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lou Mulcare C. S. Crow Mo. Fruit Exp. Sta. U. S. Fisheries Sta. Prof. Elmo G. Harris A. C. Leech Floyd E. Fawver fra H. Hailey U. S. Weather Burcan
Southwest Plain. Amoret. Ampleton City Centerview Clinton Ifarrisonville Lamar Lamoute †† Marshall Nevada Warsaw Section means and	St. Clair. Johnson Henry Cass. Barton Pettis Saline. Vernon	831 853 872 765 904 980 867 779 862 687	20 33 40 34 50 40 26 38 34 27	48.6 48.8 49.2 46.0 47.2 47.2 48.4 49.4 48.6 48.2	$\begin{array}{c c} + 5.1 \\ + 1.0 \\ + 3.5 \\ + 5.9 \end{array}$	83 82 80 86 83 86 87 84 82 87	25 25 25 25 25 25 25 25 25 22 25 22 25 22 22	19 17 20 15 21 17 15 20 15 20 15	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	44 44 36 55 49 47 48 40 48 55	1.15 0.57 0.79 0.34 2.38 0.11 0.42 1.65 1.05 0.94	-1.92 -1.97 -2.07 -2.35 -0.52 -2.49 -2.29 -1.34 -2.18 -1.90		1.6 0.5 2.0 0.8 6.0 1.0 0.5 7.0 1.5 2.3	3 5 6 4 3 4 2 4	9 13° 12 9 16 20 15° 16 12 14	18 9° 15 4 8 8 6° 10 11 10	4 6° 4 18 7 3 7° 5 8 7	sw. sw. sw. nw. se. nw. se. w. s.	Andrew Rood W. G. Bigelow E. A. Markey A. E. Derwent, M. D. John H. Patterson Jesse A. Munn J. E. Wheeler Dr. W. H. Black George A. Kaupp Everett Martin
	Livingston Nodaway Platte Worth Jaekson Caldwell Gentry Lafayette Nodaway Holt Buchanan Atchlson	856 1,131 963 1,020 1,095 688 1,169 1,048 967 916 822	35 18 38 7 23 38 34 2 42 37 71 19 24 31	44.9 44.6 44.5 45.2 43.6 47.4 41.8 48.6 47.2 46.3 42.9 45.3 45.2	+ 2.3 + 4.7 - 0.6 + 5.7 + 8.4 + 7.9 + 4.0	86 83 84 84 86 86 88 86 87 87 84 88	23 22 22 22 22+ 25 22 23+ 22 22 22 22- 22+ 22- 22- 22- 22- 22- 2	12 13 12 12 11 17 13 16 14 15 17 12 14 11	5	49 48 45 51 46 36 50 41 48 41 39 49 46 51 59	1.15 0.96 0.62 0.56 1.17 0.36 0.64 0.30 0.96 1.17 0.77 0.58 1.65 0.84	-1.15 -1.82 -1.13 -2.19 -0.94 -2.17 -1.662.07 -0.95 -1.73 -1.12 -0.79 -1.43 -1.46	0.50 0.49 0.38 0.42 0.21 0.40 0.15 0.40 0.68 0.41 0.34 0.70 0.70	2.5 2.0 1.0 1.0 3.0 3.0 1.5 1.0 4.0 4.0 4.8 1.5 2.1	7 5 3 3 5 2 5 2 6 5 6 4 5 4 5	16 18 8 25 14 12 16 15 19 14 13 13 17 15	6 8 15 2 13 13 5 11 4 12 13 7 10 9 9	9 5 8 4 4 6 10 5 8 5 5 11 4 7	nw. w. sw. n. se. s. ne n. sw. nw. nw.	M. H. Moulton Win. J. Olenhouse Fr. Adelhelm Hess Fred L. Stiff W. P. Spillman U. S. Wenther Bureau Linn Terry D. B. Oliver Miss Carrie Loomls J. R. Brink Mina Wright U. S. Wenther Bureau Albert Volker W. H. Estes

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete report; are used in determining section or division means.

Reference letters, *, b, *, appearing in the table indicate number of days missing; for example, b, represents two days, etc.

† Also on other dates. † TReceived too late to be included in means and summaries. † Post-office addresses of these stations are as follows: of Dean, Anderson.

Daily	Precipitation	for Mar	ch, 1928
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	hasins																																
															1	ау	of mo	nth															al.
Stations.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Tot
												1	1																-				
Northeast Plain. Boonville	Missouri						ļ				3				3										.02								1.20
Brunswick	Grand Chariton Missouri						T.		.15				1)2										.18						.09	Ť.	$\begin{bmatrix} 0.17 \\ 0.47 \\ 0.69 \end{bmatrix}$
Downing	Mississippl								.60					. 1	io										.31	.70	.07			Ť.	.20		1.67
Fulton	do Mississippi	.16					.03		.56	.0'	7	∵i:	8 .08	.3	33		Т.								.22		.01			.18	.03		0.70 1.27
Hermann #	do Missouri	.28							.17	.30	;	0.05	2	.0)7 23		ii								.11		.03			.04	.06		0.93
Jefferson City	do Mississippi								.42					0.0)8		.20						::::	::::		.40	т.			Ť.	.15		0.55 0.97 0.81
Macon II	do Chariton Mississippi									.2	0 1 5	.09	9		26 35											.13		T.			.15		0.69
Milan 18	Grand Mississippi									1		.20	$0 \dots 0$.15	.58	.10	.08	· · · ·	Ť.	.30		1.26
Pacific	Meramec Missouri	.58								.3	3			T'.	50	.12	.09 T.	::::								.30	T. T.			.30	.09		0.93
St. Louis (2)*	Mississippi								.41			T.		3	50 38	1.	.02				T.				Т.		т.			.96		т.	2.2 1.8
Stelfenville	do								.10		2	0.0	5	T.		.50									T.	.45	Ť.			T.			$\begin{array}{c c} 1.1 \\ 1.2 \\ 2.1 \end{array}$
Unionville	Mernmec Chariton Mississippi					.10			.55		4		5	4	50 15 12											.80	.25			.08	.08 .27 T		
Warrenton Keokuk, Ja. ***	do								.46			.2	от.											••••	.10	.05	.02			.13	.06		1.39
Southeast Lowlands Campbell!	St. Francis			.14	.03				.57							1.18	.37												.07	.10	.05		2.48
Cape Girardeau ! Curuthersville ! !	Mississippi .	.45			.12				.80	.3	5		.39	9 .0)2	.70	.50	.01							.07		.02				.05		$\begin{vmatrix} 2.0 \\ 2.3 \end{vmatrix}$
Deuter II Douiplan	St. Francis			.22					. 80							. 04	.10							• • • •			.02			.03	.13		$\begin{array}{c c} 1.1 \\ 2.0 \\ 1.8 \end{array}$
Juckson Murble Hill	Mississippi Mississippi					J	т.		.60	.3	0	.6	0		3	.65	.45			1					20					.30	.07		3.10
New Madridta Poplar Bluft	do	20) 		.35					8	5					.03	1.40							• • • •		.03	.10)					$\begin{bmatrix} 3.0 \\ 2.0 \end{bmatrix}$
Sikeston##	Mississippl. do			1)i						т.				т.								1.2
O:ark Plateau.						1				ķ.		N		Ш																	ļ .		
Arcadia II	Neosho			T.				••••	.35		1				00		1.22													Т.	T.		$\frac{2.0}{2.6}$
Bolivar	Black Osage			.95			· · ·		.64					Ť)6 T. T. T.	1.50	.10			.01	į									.05	T.		1.9 3.5 2.6
Caplinger Mills Dean Eldon!!!	Osage Neosho Missouri		3	.12	.14				.76	3	6					1.4	.44														Т.		2.7
Farmington	St. Francis								0.08	Ť.		4	3	(05 32	63	1 20										Ť.		.41		.03		2.0
Gulenu	White								.i2		2			: : : :		.58	$\frac{.92}{1.27}$.36	; ; ;		$\frac{1.9}{2.2}$
Hailey	St. Francis White				.06					.1	0	.0	7	: ::::		.80	$\frac{.45}{.25}$.02			2.0
Koshkonong	Black Osage	. 17	7						.70	.4	ο		:		9	T.	1.60		· · · · ·							Ť.	.37			.16	3		$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
Lockwood	White Neosho	28	5		.45	i				3	6				т.	1.4	.68		. 1. 	一个							.02	2		.05	.05		2.8
Owensville	Cacaonada	E																													21		1 1 0
Salem (near)	Merameedo Neosho Whitedo			Ť.	.14				1.00	T.						.78	.30			т.						.21				.28	3		1.8
Seymour (near)	White			T.	.71	3			.50	3			: 0	7 .0	0i .04	.70 1.33			т.	T.	r.					.02			T.	T.	Ť.		$\frac{1.9}{2.3}$
Steelville . Stover . Tuscumbin . Willow Sprgs. (near)	Missouri	1	1		-45				.10		0		:(:::		13 16	.13	.12			* ::::				::::		Ť.	.26			.07	.13	T.	$ \begin{array}{c c} 2.7 \\ 0.4 \\ 1.3 \end{array} $
Willow Sprgs. (near)	White				.55	5			.02	2 .4	4				10	.4	.75										1.18	3			.01		3.4
Southwest Plain. Amoret	Osage																																
Appleton City Centerview	Osagedo Missouri Osage			.03	Т.		.25	5	.03	2				T		1.00 T.	.05			T.							Ť.			Т.	T. T.		0.5
Clinton	BIISSUUTI								.05					T	. 6															i.ie	T'.		0.7
Joplin*	Osage	. 0	3	iii	Ť.		.0	3	.45		5			Ť.	.05	1.83	.05			.03	3							••••	.40		.08		$\begin{bmatrix} 0.8 \\ 2.9 \\ 2.8 \end{bmatrix}$
Lamar II	Missourido				.26		T		.04							.80				т.					.01	01	小			.05 T	05		0.1
Nevada Osceola[Osage			T.					1.18					. T		1.00	.40													1.10)		1.0
Warsaw	dodododo			Т.					.28				T.	1	03	.80									∵ii						.08	}	$\begin{array}{c c} 1.0 \\ 0.2 \end{array}$
Northwest Plateau.						1				1		n	1	1																	1		
Albany Bethany	do								.30			.0.	5 .0	3 .0	04	••••			Ť.	Ť.					T.	.78	T.	יוֹיִי	7.	.05	.18		$\begin{array}{ c c c } 1.2 \\ 1.1 \\ 0.9 \end{array}$
Chillicothe	Missourido					1			.49			T.	Ť.	·					T.	T.					Ť.	Ť.	.08			.10	. io		0.6
Gallatin III	Grand					1		X.																									
Grant City	Missouri					T.		Ť.	T.		T.	.0	T.	i	io					T.					T.	.03	T.			.15	.10		0.3
Lexington	Missourido															1																	
Maryville	do	::::							.68		3	0.0	6	0)4				T.	т.	····				.06		.07			T.	.40		0.9
St. Joseph*** Tarkio Trenton	do				T.				.34			m	.03	3	36	l			T.	Т.			,		.09		.01		.20	.20			0.7 0.5 1.6
Tremour	traild	1		••••	1.			••••	.36			T.	T.	.3			••••	••••				••••			1.	.70	.02	1		.21			1.6
											1				1																		
Event as others		N.																	l	}									F.				1

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation.

11 Precipitation in the morning; amount then recorded is for the preceding 24 hours.

12 Trace, or less than 0.01 inch.

13 Weather Bureau station; precipitation is for 24-hour period, midnight to midnight.

14 Precipitation in the next following measurement; separate dates of fall not recorded.

15 Precipitation is for 24-hour period midnight to midnight.

						1	Jan	y 1	emi	pera	itur	es :	for	Ma	rch	, 18	328						. ,						_		
Stations.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31 Mea
Northeast Plain.	47	56	40	40	40	53	CA	EM	50	CO	00	F.C.	70	-	42		50	10			-0	00			600	-					
Brunswick \$ Maximum Minimum	47 21	25	48 25	48 30	40 15	16	64 29	33	37	68 30	69 34	43	35	58 28 54	41 30	47 31	52 22 44	46 26	47 26	54 22	76 29	89 35	84 50	55	86 51	52 48 65	48 28	70 29	36	47 26	70 58. 28 31. 67 57.
Columbia Maximum Minimum	44 23	28	45 29	24	18	32	38	43	36	32	45	49	38	34	34	43 31	24	44 27 47 23	47 26	51 29	72 31	83 55.	81 55	77 55 72 56 75 50 67	80 56	34	47 29 55	70 40	44 23	47 27	31 34.
Fayette	49 19	22	48 22 46	27	14	17	30	35	35	67 29	33	78 39	55 35	69 24	39 33	46 29	57 17	47 23	50 21	29 55 22 47	74 21	89 30	83	75 50	83 50	55. 53	55 26 44	45	42 33	46 23	49 57. 24 29. 64 54.
Hannibal Maximum Minimum	44 25	29	28 47	49 24 50 27 45 22 52 29 44 26 45 30	39 18 42 14 35 17 40 17 36 12	16 54 32 55 17 49 31 55 21 50	62 38 63 30 58 35 63 34 56	57 33 57 43 54 35 52 42 58	52 37 49 36 552 35 45 32 51 52 34 50 37 51 34 52 36 51 36 51 36 52 37 51 36 51 37 51 36 51 36 51 36 51 51 51 51 51 51 51 51 51 51 51 51 51	30 64 32 67 29 57 30 66 31 63 28 55 27 67 28 63 30 52 34 60 27 55 83 27 52 28 52 52 52 52 52 52 52 52 52 52 52 52 52	67 45 71 33 65 40 69 41 65 34 66 37 66 69 42 66 37 64 69 42 69 42 69 69 42 69 69 69 69 69 69 69 69 69 69 69 69 69	76 43 76 78 78 374 77 49 47 77 49 41 73 45 44 76 44 76 44 76 44 76 44 76 45 47 47 47 47 47 47 47 47 47 47 47 47 47	52 35 52 38 55 55 52 34 53 40 64 34 72 38 55 37 63	50 24 53 31 58 32 54 30 54 26 57 31 56 30 56 38 52 26 55 33	39 34	40 31	42 25 45	40 24 43	46 30	47 32 55	68 31	80 55	82° 52	67 55	78 55 75 60	65 33 65	28	45 29 59 38 72 31	40 29 40	28	30 34.
Jefferson City \$\\ \ Maximum Minimum	25 46 23	29 57 27 53	29	52 29	40 17	55 21	63 34	58 40	51 37	66 31	69 41	77 49	53 40	58 32	40 37	43 30	24	30	50 32	55 31	73	85 40	83, 54	55 83 52	75 60	60	28 50 30	72 31	37	50 28	70 58. 31 35.
Kirksville Maximum Minimum	44 21	53 25	49 22	26	36 12	29	31	52 37	52 34	63 28	65 34	69 41	64 34	54 30	45 29	46 23	21	22			72 23	80 36	82 42	74	79 47	68 36	23	55 34	45 30 60	45 23 55	64 b56. 29 b29. 62 58.
Louisiana Maximum, Minimum	21 45 25 47 20	25 50 33 55 25 55	22 52 26	45 30	40 17	45 28 56	31 62 34 63 31 62 32 61	40 52 37 61 41 53	50 37	55 27	63 37	73 42	72 38	54 26	45 29 54 32	46 23 55 32 53 28 42 30 40 29 47 26 42 28	47 21 46 20 52 22 47	44 22 45 22 45 22 45 23 41 28 45 22	48 25	48 28 54 30	72 23 67 27	78 54	82 38	46 80 57	78 53	76 43	44 23 67 28 45 24	34 58 36	36	30	25 33.
Maconly	47 20	55 25	48 24	50 30	17 38 13	56 18 51	63	53 38	51 34	67 28	67 36	.78 45	52 34	57 31	40 31	53 28	52 22	45 22	48 23	30	73 31	84 34	81 54	80 52	81 50	51 45	45 24	62 30	36 36 31	46 23	67 57. 29 31.
Mexicoly	46 24	28	49 27	48 35 49 25 42 25 49 34	38 16 35 20 37 10	51 18 50	62 32	38 55 38 54	52 36	30	69 42	76 44	55 37	56 30	40 32	42 30	23	45 23	48 23 52 28 51	53 33 49 37 50 26 51 32	71 29	84	83 52	54	82 53 75	62 56	48 29 46 31	64 30	39 35	48 27	29 31. 67 57. 30 33.
St. Louis(1)	45 27	31	45 32	49 25	35 20	50 30	61 39 60	54 44	51 35	52 34	66 37	70 46	63 40	56 38	45 35	40 29	42 27	41 28	33	49 37	64 37	81 53	81 57	71 58	75 56	64 35	31	66 39 50	49 31	48 31	63 55. 33 36. 63 56.
Unionville	44 20	25	45 32 52 20 51	42 25	37 10	30 54 30 52 27	30	44 55 32 61 45	50 33	60 27	64 35	68 44	40 64 32 73 39	52 26	45 35 47 27 53 35	47 26	48 20	45 22	44 22	50 26	37 73 32 68 32	81 53 82 46	83 46	56	56 80 45	64 35 74 36 76 45	44 22 51 29	50 32	44 27 67	44 22 47	30 - 29.
Warrenton Maximum Minimum	43 22	53 26	51 28	49 34	38 16	52 27	63 38	61 45	54 36	58 29	66 39	75 45	73 39	55 33	53 35	42 28	43 23	44 21	48 28	51 32	68 32	81 53	83 52	80	81 54	76 45	51 29	32 67 35	67 34	47 28	65 50. 29 31.
Southeast Lowlands. Campbell	49	58	53	55	52	53	67	55	64	66	71 36	71	66	60	53	37	41	40	-	- 1	69	82	80	- 1	70	79	56		60	57	61 60.
Caruthersville Minimum Maxlmum	25 44	52	52	50	52 23 50	29 47 32 52 32 51	27 61 32 68	55 28 61	43 55 38 64 42 54	32 55 38 70 38 56 27 61	36 69	71 46 69 38 72 30 71 43 73 43	55 68 56 67	60 37 60	53 32 55 39 50	37 32 40 35 37 31 45 29 38 33	25 36 32 45 27 39 23 49 27	23 46 29 50 21 42 21 55 23	53 28 49 30 51 23 50 24 55 27	57 33 54 39 60 25 57 28 61 30	28 60	40 80	43 80	71 54 76 54	54 67 55 72 55 66 55 75 53	79 54 77 56	32 72 39 56 36 52 31 55 37	75 36 75 40 74 42 72 33 76 39	38 75	34 64	29 34. 64 60.
Minimum Doniphan Maxinum	31 48 23	33 57	36 53	42 55	27 56	32 52	32 68	48 58	38 64	38 70	38 72	38 72	56 67	43 60	39 50	35 37	32 45	29 50	30 51	39 60	34 68	44 80	51 80	54 68	55 72	56 74	39 56	40 74	64 71	33 52 34	32 39. 64 61.
Jackson Maximum	47	55	53 25 58	38 56	30 50 20 48	32 51	28 65	48 58 42 62 44 57 47	42 54	38 56	38 72 30 71 29 78 31	30 71	40 65	40 62 32 60 39	32 58 30 54 33	31 45	27 39	21 42	23 50	25 57	34 68 25 62 24 68 27	44 80 27 84	40 81	55 71	55 66	74 53 72 49 75 53	36 52	42 72	71 41 72 38 70 45	53	24 33. 60 60.
Minimum Poplar Bluff Maximum	20 49	22 67	27 53	36 57	20 48	20 55	31 69 27	44 57	38 69 41	27 61	29 78	43 73	51 77 57	32 60	30 54	29 38	23 49	21 55	24 55	28 61	24 68	40 84 41	42 82 46	54 66	55 75	49 75	31 55	33 76	38 70	30, 48 35	23 32. 63 62.
Minimun Maximum Maximum	24	21	26	39	22	32	27	47	41	34	31	43	57	39	33	33	27	23	27	30	27	41	46	55	53	53	37	39	45	35	26 35.
Cairo, Ill	43	55	47 37		40	50	63	60	56	54 35	69	69 51	65	56	50	36	39	42	49	51 37	58	79 47	79 54		68	75	47	72 39	71 39	44	59 57
Ozark Plateau.	29	1		32	24	30	36	49	39	35	38	51	46	39	33	33	29	29	31	37	35	47	54	56	59	43	34	39	39	34	33 38.
Arcadially	44 22	22	46 25	52 33	43 18	51 21	66 29	55 36 59	54 39	60 26	72 28 69.	70 36 77	63 46	60	36 30	37 27 37 26 31 28 44 27 34 30 35 29 37 24	40 21	43 15	51 20	54 27	68	84 29	79 43	70 54	75 54	66 53	53 31	71 30	56 39	46 29	62 57. 24 30
Aurora	26	53 28	49 37	51 37	47 19	54	64 31	59 46	39 57 37	26 69 39	69 43	48	46 71 41	52 37	45 32	37 26	44 22	15 46 28	46	56 36	71 31	29 78 50	77 56	78 54	81 51	78 51	58 29	79	39 73 32 73	29 45 28	68 60. 30 36.
Birchtree	48 24	55	48 28	53 38	46 18	53 30	66	58	59 40	61	72 34	71 43 78 44 74 38 70 50	66 48	27 52 37 57 57 57 33 57 30 55	45 32 51 32 40 33	34 28	44 22 42 23	28 47 23 48 25 38 19 50 26	29 43 23 48 27 47 25 50	27 56 36 57 27 54 29 55 31 60 32 58 27 56 29 56 30 52 56 30 57 57 58 58 58 58 58 58 58 58 58 58 58 58 58	23 71 31 67 26 72 30	80 43	77 44	73 54	80	67	31 58 29 54 32 63 29 51	30 79 42 75 39 76 29 72 33	73 36	30	65 59.
Eldon M Maximum	44 26	55	46 39	51 29	40	58	27 65 34	49 58 37	54	67 31	67 31	78 44	55 41	57 33	40	44 27	48 25 37 19	48	48	54	72	80 43 82 34 84	81 51	77	58 80 51	63 55	63 29	76 29	36 39 37	46	67 58
Farmington Maximum	42 19	54	48 32	48	18 43 19	54 27	64	37 52 45	39 51 38	64 28	70 36	74 38	64	57	51	34	37 19	38	47 25	55 31	68	84	83 54	70 54	51 74 55	64 49	51 30	72 33	66 34	29 45 30	29 33 67 57 28 33
Koshkonoug J Maximum	50 27	56	32 52 36	54 38	48 21 43	54 27 51 29 55	35 67 33	56 49	38 63 41		70 36	70 50	49 64 50	55 41	30 53 32	35 29	48 26	50 26	50 29	60	24 67 34 69 28 69 28 70 28 67 30 68 38	46 81 47 78 32 78 36 76 42 77 51 76	79 54	71 54	80	70 51		80	70 39	46 31	65 ¹ 60 31 ⁵ 37
Lebanon Maximum Maximum Minimum	43 19	54 20	48 28	52	14	55 17	66	56	57 37	65 34	68 36	74 46 72 46	58 40	41 55 30	32 37 30	37 24	45 15	45 15 50 24	43 20	53 27	69 28	78	77 50	76 50	57 79 51 78 55	66 54	52 27	78 28	41 38 53	44 26	66 57
Mountain Grove W Maximum Minimum	47	55 25	28 52 31	55 35	50 18 52 20	17 52 22 55 36 56	32 70 33	33 57 35	60 38	64	71 33	72	62	56 34	42 31	37 25	42 20	50 24	52 25	56	69	78 36	78 52 76	72 51	78 55	68 52	62 28	78 32	53 47	46 26	27 30 70 59 27 33
Neosho Maximum Minimum	22 45 22	54	54 30	52 38	52 20	55 36	64	64 49	59	68 34	69	75 43	75 42	58	49 32 55	43	47 20	48	47 27 45	56	70	76 42	76 53	76 56	80	80	71 26	79 43	78 36	48	68 62 27 34
Rolla	40 21	53	51 31	48	45 16	56 31	62 35	60 47	32 55 38	61 31	45 66 42	70 44	42 75 42 70 43	58 35 57 33 53	55 32	27 42 25	45 20	28 44 23	45	52	67	77 51	53 75 53	76 56 73 55 74	47 73 56	69 57	52 27 62 28 71 26 50 29 53	40 78 28 78 32 79 43 74 36 78	47 78 36 73 34	48 30 45 27 42 28	62 58
Springfield) Maximum	43	52	49	50 27	43 19	50 31	63	54 46	55 38	64 38	67 45	75 52	57 42	53 39	44	37 27	40 24	44	28 44 31	53 34	68	76 51	75 56	74 55	77 55	57 62 35	53	78 42	60	42 28	28 35 65 57 33 36
Southwest Plain. Amoret	-								- 1											1					00						
Appleton City Maximum	49				43		65	59	57	69	7i	80		56	51	45	50	49	48	57	75	80	79		83	_	50	79	72	47	73 61
Centerview	24	26	33	34	19	36	35 64	48 61	34 64	37	43	50 76	37	36	31	29	26		29	30 54	34 67	45 82	53 75	54			31	40 78	30		29 35 68 61 31 36
Clinton	38	25	52 29 53 32 45 28 51 29 47 28	50 38 52	41 17 43	31	46	47 65	48	65 35 70	78 41 76	44 75	35	56 35 57 32 55 35 57 39	48 33 46	29 52 30 56	48 24 56	31	48 27 50	30	32	48 65	53 75 52 77 55	55	52 82 54 80 55 86 51 83	75 42 70 48	52 28 50 30	40 78 37 76	74 30 75 33 35 32 39 37 60	25 44 22 44 28 47 22 49 29 48 21 50	31 36 66 61
Harrisonville M Maximum	36	36	32	52 36 51 31 53 36 50 25	43 20 38 15	55 33 61	68 35 63	48 62 37	48 58 38 57 33	36	46 72 40	48 78	38	32	31	31	31	29	50 29	30 51 28 59 27 59	31	50	55 81	55 75	55	48	30	40	33	28 47	32 37 73 59 26 32
Lamarýý Minimum Maximum	29 49	22	28	31	15	17	34	37 58	33	71 36	40	46 79	58 34 60	35	31 37 33 34 33	47 29	53 23	47 25 49	48 24 49	27	32	50 85 38 78 34 85 45 47	50 80	53 78	51	46 65	48 26 56 29	28	32 39	22 49	26 32 68 59
Lamonte	27 45	27	29 47	36 50	46 21 42	21 59	34 63	58 34 58	56 37 53 37 57 57	69 38 72 32 69	71 39 71	46 81	41	39 56	33 50	41 28 48	47 23 51	49 24 48	49 29 46	31	33	34 85	48 83	55 77	86	71	29	30	37 60	29 48	301 34
Marshall	22 57	24	28	25	17	29	32	46 57	37	32	42 67	48 78	45	30	35	30 46	23 51	48 27 48	46 25 50	25 56	29 76	45	51 84	54 76	52 86	37 73	28	36 72	29 70 30	21 50	71 61 27 33 74 °63
Minimum Nevada	22	22	52 34 50	49 32 52 39 5 52 39	40 15	60 21 59 29 57 29 60 36	63 32 64 35 64	42 60	37 58	47	40	42	71	50	72 34 52 32 54 32	30	21	26	24	49 25 56 26 57 31 55 34	34 67 32 59 31 78 32 71 33 76 29 76 28 74	47 80	50 80	74 ¹ 55 77 55 75 53 78 55 77 54 76 55 76 56 80 45	52 86 50 84	56 46 65 58 71 37 73 44 76	48 28 48 28 52 28 51 30	83 28 79 30 89 36 72 35 80 43	30 63	9.3	27 °33 71 62
Warsaw Minimum Maximum	50 25 52	28	34	39	46 20 52 15	36	34	48	36 67 31	47 71 38 76 33	40 71 43 77 34	78 50 80	71 39 73 39	58 38 58 58 29	32	43 27	49 25	48 32 48	31	31	34	46	56 82 42	56	52 82 47	44 76 45	28	43	31	48 27 46	31 36
Northwest Plateau.	22			39	15	58 31	70 28	68 33	31	33	34	50	39	29	32	45 31	50 22	20	47 27	34	74 26	53	42	45	47	45		81 40	76 28	26	71 64 28 32
Chillcothe \\	46		49	43			63	59 36	54 34	69	69	73 40	52 34	57 94	40 31	48 29	51 26	47 26	46	56 23	77	87 39	85 52	77	85 50	50 42	45 22 39	64 32	34 32	47 24	68 57 26 31
Grant City	41 20	51	24 47 23	29 41 23 45 22 43 24 50 31	13 37 11 39 17 37 13 42 16 37	32 60 31	63 32 58 31 63	49	48 33 50	29 65 31 69	69 33 65 35 68	65 33	63	57 24 54 29 54 35 53 28 58 32 55 32 60	45	41 28	43 24	26 45 29	44	23 54 24	77 29 78 32 77 42 76 26 77 36	83 50	52 83 50		81	78 35	39	32 49 34	38 26 37	45 25	65 55 29 31
Kansas City Maximum	45	56	46	45	39	31 61 33 59	63	62	50 38	69 40	68	77	53	54	45 29 45 32 37 31 52 34 50 30 50 82 43	43 30		45	44 24 43 30 43 21 47 26 49 23 44	24 57 30 52 23 57 24 58	77	84 55	80 57 83	75 50	81 45 84 57 83 48	68 32	23 46 27	34 72 37	37 29	46	70 58 37 36
Kldderý Maxlinum Minimum	45 20	53	46 34 47 24 57 30	43	37	59	43 59 30 65 35 65 31 67 33 62 35	56 31 65	48	65	44 66 30 69 41 67 33	48 71 36 79 51 66	50	53	37	43 27	49 29 47 21 51 24 49 23 51 23 48	45 51 43 21	43	52	76	84	83 50	75 59	83	32 49 42	41 19	63	29 33 30	30 45 22 49 26	62 55 25 28
Lexington	48	50	57	50	42	15 59 32 65 32 65	65	65	48 31 56 37 50 35 54	65 29 69 33 68 32 68 38	69	79	73	58	52	48 31	51	47 26	47	57	77	84 35 86 54	82 57	76 50	81 54	42 75 32 76	48 25	21 73 36	62 30	49	72 62 33 34
Maryville	44	56		46 27	37	65	65	48 59	50	68	67		54	55	50	47 27	49	26 44 29	49	58	81	85 52	86 50	78	86 49	76 34	21	55 33	45 26	47 25	75 59 29 31
Oregon) Maximum	18	50	51	44 29	40	65	67	42 58 45		68	67 34	47 69 59	55	60	50	50 28	51	50 29	44	25 59 26	80	88	84 55	77	85 52	34 75 35 63	47	62 35	49	49	70 60 34 34
St. Joseph	20 45	55		29 44	40	63	62	60	36 51	69	66	52 72 46	52	32 55 32	43	46	48	46 29	-43	56 27	78	86 52	83	78	83 55	63	47 22 44 26	67 36	37	49 25 45 80	70 58 35 34
Trenton Maxlmum	24	5€	. 55	46	35	34 59	58	56	37 58	38 61	37 68	70		51	46.	56 56	25 46	48	46	55	75	53 76	57 81	77	84	76	53	59	46 29	48 26	62 58 34 32
Mlnlmum	21	. 26	28	28	14	31	29	41	38	29	39	44	34	29	32	29	23	27	23	26	29	48	50	55	48	40	23	31	29	20	01 02

^{*,} b, etc., Indicate respectively 1, 2, 3, etc., days missing from the record.

fustruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

WBO, \$t. Louis, 5-5-28-915

CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION. GEORGE REEDER, Meteorologist.

VOL. XXXII. COLUMBIA, MO., APRIL, 1928. No. 4.

GENERAL SUMMARY.

While the first four days of April, 1928, were as mild as summer in all Missouri there followed a sharp reaction to below normal temperatures for April that persisted practically nearly the remainder of the month beginning about the 7th.

The most outstanding features were the general freezes on the 8th and 9th, and again on the 13th, 14th, and 15th, which practically killed the fruit crop, save perhaps late apples, some peaches in the southern parts, and berries in the commercial fields of the Ozark region. The month also was remarkably free from severe wind, hail, and excessive rainstorms.

During April there was quite plentiful precipitation during the first half of the month, coming in two or three spells at regular intervals. After the middle of the month there was very little rain over the northern two-thirds of the State, and no general heavy rains. The Ozark region and the southeastern lowlands, however, continued to receive quite ample rainfall for all immediate needs.

Due to cool weather generally and lack of moisture over more than the northern half of the State vegetation made little advance, the early fruit and gardens being badly affected by the mid-month freeze. Oats, alfalfa, and clover also were damaged somewhat. Winter wheat made little advance. More than onefourth of the crop had been winter killed, and there was not enough of warm spring rain to bring the damaged part back to life if it had any. A large amount of plowing was done for corn, and about one-third had been planted when the month ended. In some localities in the central and northwestern counties the ground was dry to depths of 18 inches, rather a remarkable condition for the spring time of year.

TEMPERATURE.

The mean temperature for the State, as determined from the records of 67 stations, was $51.6,^{\circ}$ 3.5° below the normal and more than 6 degrees cooler than April, 1927. The first four days of the month were abnormally warm, but the remainder of the month was persistently cool, save the last two days when temperatures were again above the normal. Summer warmth obtained on the 1st, and 2d, afternoon temperatures ranging well into the 80s. A cold spell with frost and freezing temperature persisted more or less from about the 7th to the 15th. There was no general freeze after the 15th, but there were a few local frosts and freezes later in the month. The extremes of temperature, 88° and 16°, are not unusual for April.

PRECIPITATION.

The monthly precipitation for the State, based upon the records of 98 stations, was 4.79 inches, or 1.06 inches more than the 56 years' average. The monthly distribution was markedly uneven, being excessive in the southeastern lowlands and most of the Ozark Plateau, and deficient generally elsewhere, the deficiency averaging more than one inch in the northwest plateau. Most of the rain of the northern and southern sections fell during a four day spell from the 4th to the 7th, the last three weeks, save a shower occasionally here and there, were very dry. In the southern-third of the State there were several rainy periods at quite regular intervals during the last as well as the first part of the month. The monthly total at some of the southern stations exceeded 9 inches, while at some northern stations there was less than two inches. The greatest 24-hour amount was 3.78 inches, at Seymour on the 5th.

During the coldest spell snow fell over the northern half of the State. Locally amounts were from one to two inches deep

but soon melted.

MISCELLANEOUS PHENOMENA.

Earthquakes.—Tremors felt at Jackson and New Madrid at about 9 a. m. the 15th.

Fogs, dense.-Kansas City on the 21st, and Salem on the 21st, and 23d.

Frosts, light.—8th, 10th, 12th, 19th, 23d, 24th, 26th, 27th, and 28th. Heavy.—25th, 27th, 28th, and 29th. Killing.— 7th, 8th, 9th, 14th, 15th, and 16th

Hail.-Light hail, no damage, 5th, 19th, 20th, and 26th. Halos, lunar.—1st. Solar.—1st, 2d, 7th, 9th, 11th, 12th, 15th, 16th, 18th, 19th, 20th, 25th, 26th, 29th, and 30th.

Sleet at a few stations on the 6th, 19th, 20th, 25th, and 26th. Thunderstorms. -4th, 5th, 6th, 11th, 13th, 14th, 18th, 19th, 20th, 21st, and 24th.

Wind. -Strong winds, but without damage, were more or less general on the 1st, 2d, 3d, 4th, 13th, and 29th. At Oregon, Holt County, a squall took the top off the Forbis School house. Damage about \$200. At Tarkio Atchison County there was almost a tornado on the 4th. No damage or loss reported.

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

	essure	Mean relative himidity.	Sunshine.		Wind,
Stations.	barometric pre	7 P. m. C.	Total hours. Percentage of possible.	Total movement, miles. Average hourly velocity.	Max. velocity. Direction. Date.
Columbia. Ilannibal Kansas City St. Joseph St. Louis Springfield Cairo, Ill Keokuk, Iowa.	29.93 29.93 29.92 29.92 29.94 29.93 29.97 29.94	70 69 49 65 65 53 71 57 71 52	246 62 306 77 248 62 210 53 239 61 257 65	6,704 9.3 7,087 9.8 8,325 11.6 7,424 10.3 9,372 13.0 7,886 11.0 7,867 10.9 6,276 8.7	33 nw. 14 42 nw. 13 38 nw. 13 47 sw. 6 36 s. 13 33 sw. 29

Beginning January 1, 1928 wind velocities are by 3-cup anenometers.

COMPARATIVE DATA FOR APRIL.

	,	l'empera	ture.			Precipita	tion.		Nur	nber	of da	ıys.
Year.	Mean.	Departure.	Highest.	Lowest.	Mean.	Departure.	Greatest in 24 hours.	Total snowfall, unmelted.	With .01 inch or more.	Clear.	Partly cloudy.	Clouds.
1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1890 1900 1900 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1914 1915 1916 1917 1918 1919 1910 1911 1912 1914 1915 1916 1917 1918 1919 1919 1919 1920 1921 1922 1923 1924 1925 1926 1927 1927 1927 1927	57.9 55.7 56.2 56.3 53.9 57.9 61.9 56.7 56.6 55.9 48.7 56.6 56.7 56.6 56.0 56.2 56.2 56.2 56.2 56.2 56.2 56.2 56.2	+2.8 +0.6 +1.1 +1.7 -2.0 -1.2 +1.0 +2.8 +6.8 -0.7 -2.6 -1.1.6 -1.2 +0.8 -6.1 -1.2 +0.8 -6.4 +1.5 -0.3 -1.6 +0.9 +1.2 +0.1 +6.5 -1.1 +1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 -1.5 +0.5 +0.5 +0.5 +0.5 +0.5 +0.5 +0.5 +0	91 90 93 93 93 95 95 96 89 99 94 95 91 95 97 94 99 99 99 99 99 99 99 99 99 99 99 99	200 26 24 15 26 19 20 24 17 21 14 4 6 21 19 20 22 26 19 20 24 19 20 24 21 19 20 4 19 20 4 19 20 4 19 21 11 24 11 18	2.52 3.17 3.90 5.66 7.84 4.55 3.57 3.36 3.51 4.55 3.65 2.66 3.54 3.43 3.43 3.51 3.61 3.61 3.61 3.61 3.61 3.61 3.61 3.6	-1.89 -1.20 -0.55 +0.18 +1.94 +4.12 -0.55 -1.77 +0.21 +0.83 -0.07 -0.02 -0.36 -0.87 -1.06 -0.18 +2.03 -0.53 -1.41 -0.29 +1.58 -0.74 -1.82 -0.64 +0.152 +1.26 +0.43 +1.52 +1.26 +0.44 +0.15 +1.52 +1.42 +1.52 +1.42 +1.53 +1.53 +1.66 +0.38	4.25 5.50 3.25 5.30 3.25 4.06 6.10 4.00 3.30 4.35 4.06 4.00 3.50 3.25 2.45 4.06 3.30 2.45 4.06 3.30 3.25 2.45 4.06 3.30 3.25 4.06 3.30 3.25 4.06 3.30 3.25 4.06 3.30 4.07 4.07 4.07 4.07 4.07 4.07 4.07 4.0	T. 0.0 T. T. 0.3.8 0.7 T. T. 0.9 T. T. T. 0.0.4 T. T. 0.0.4 T. 0.0.0.2 L. 4 T. 0.0.0.2	5 8 8 9 9 11 12 8 8 7 9 9 10 10 10 7 8 8 11 10 10 7 7 10 12 11 1 8 6 6 10 8 14 8	9 8 12 14 11 10 12 12 11 13 12 12 12 12 11 12 12 12 11 13 14 14 12 12 12 11 13 13 13 14 14 10 13	 8 99 10 8 12 11 19 9 9 10 7 7 11 10 6 8 8 7 7 5 7 7 8 8 8 6 6 6 7 7 7 7 6 8 8 8 9 9 6 7 7 7	13 13 13 13 8 8 7 7 9 9 9 9 9 9 8 6 11 11 10 10 10 10 11 12 12 11 11 12 12 11 11 12 13 13 13 13 13 13 13 13 13 13

Climatological Data for April, 1928

			1	,	Tem pera					ior .		, 1928		ches	Nu	mber	rofd	0.108	=	
Stations.	Countles.	uo l	Length of record.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.		Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	fall,	With precip.		Partly cloudy	Cloudy.	Prevailing direction of wind.	Olmervara.
Northeast Plain. Brunswick Clifton Hill. Columbia Downing Fayette Fulton Gorin. Haunibal Jefferson Clty Kirksyille Louisiana †† Macon. Mexico. Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Unlonville Warrenton Keokuk, Iowa. Section means and	Chariton Randolph Boone Schuyler Howard Callaway Seotland Marion Cole Adair Pike Macon Audrain Monroe St. Charles St. Louis City do Shelby Lewis Pintaan Warren Lee, ln extremes	652 731 784 876 661 818 700 534 557 969 875 800 748 456 578 779 650 1.062 814	48 28 37 6 47 39 38 33 28 33 28 33 15 34 45 55	49.7 49.7 51.2 48.6 49.6 50.8 50.0 52.0 48.8 50.2 52.3 51.5 49.4 48.0 52.2 49.4 51.5	- 4.4 - 3.8 - 3.7 - 3.5 - 3.4 - 4.1 - 2.9 - 3.8 - 3.5 - 3.7 - 3.7 - 3.7 - 3.7 - 3.7 - 3.7 - 3.5 - 3.1 - 3.7 - 3.5 - 3.5 - 3.5 - 3.6 -	83 83 82 81 81 81 82 87 79 82 83 83 81 81 81 80 78 81 82 87	1 29 1 1 2 29 2† 2 1† 29 29 29 29 29 29 29 29 29 21 11 22 21 21 21 21 21 21 21 21 21 21	22 20 23 18 20 23 25 23 18 25 23 18 27 27 27 20 16 23 31 18	15 15 9 9 9 15 15 15 15 15 15 15 15 15 15 15 15 15	47 39 36 38 48 42 37 39 32 32 32 36 38 44 43 44 44 46 47 37 39 30 30 30 30 30 30 30 30 30 30 30 30 30	2.47 2.50 3.25 3.93 4.71 2.53 2.61 4.60 2.77 2.54 2.74 2.59 4.94 3.02 3.08 2.86 3.60 4.88 3.60 4.88 3.30	-1.01 -1.86 -0.81 -0.59 +0.39 +0.38 -1.47 -0.64 +1.06 -0.87 -0.55 -0.93 -0.126 -0.79 -0.93 -0.67 +0.37	1.15 1.00 1.40 1.57 2.09 2.30 1.14 1.00 2.20 1.38 1.35 0.90 1.15 2.34 1.32 1.08 1.25 2.55 2.55 2.55 2.85	0.8 0.5 T. 2.0 1.0 T. 0.5 0.4 0 T. 0.5 0 T. T. 2.0 1.0 T. 2.0 1.0 T. 0.5 0.4 0 T. 0.5 0.7 T. 0.5 0.7 T. 0.5 0.7 T.	7 9 7 8 6 8 6 9 8 6 6 9 8 6 6 7 6 6 8 8 8 7 7 6 6 6 11 7	15 13 11 15 10 6 12 17 16 13 19 20 13 11 12 	3 10 9 5 14 8 7 4 5 10 0 3 5 8 10 9 9 11 15 7 7	12 7 10 10 6 16 11 9 9 7 11 7 12 11 8 5 10 7 11 10 7 11 10 11 11 11 11 11 11 11 11	se. nw. w. nw. n. nw. se. se. s. sw. se. n. n. nw. n.	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Burean James Taylor J. D. Settle Chamber of Commerce J. W. Pulliam U. S. Weather Bureau Miss Emma Swilt Prof. J. S. Stokes J. T. Farrell W. C. Brown Mrs. Abble Snoddy J. S. Conway L. C. Saeger U. S. Weather Bureau St. Lonis University J. C. Jewett Frunk Half Geo. W. Dayls Prof. A. W. Ebeling U. S. Weather Bureau
Southeast Lowlands. Campbell. Carnthersville. Doniphan Jackson Marble Hill Morehouse Poplar Bluff Sikeston Cairo, Ill. Section means and	Dunklin Pemiscot Ripley Cape (lirardenn Bollinger New Madrid Butler Scott Alexander, III extremes	314 265 344 428 470 289 329 318 358	2 31 23 36 32 26 23 22 52	54.8 56.7 54.0 52.4 54.6 54.5 55.0° 54.0 54.5	-3.5 -4.0 -4.5 -2.1 -4.7 -2.9 -4.1 -3.7	78 78 80 79 82 79 79 77 82	1 23 1 1 2 •••••••••••••••••••••••••••••	27 33 25 23 24 27 30 32 23	16 15 15 10 10 10 10† 10† 15	35 32 40 43 39 38 34 30 43	6.60 4.81 7.44 6.42 7.46 7.51 7.22 6.71 5.76 6.66	+0.69 +2.07 +1.95 +3.02 +3.25 +2.75 +2.45 +2.04 +2.28	2.58 2.80 2.00 2.50 3.10 2.97 2.80 2.53 2.47 3.10	0 0 0 0 0 0 0 0 0	10 7 10 11 10 14 9 9 13 10	12 14 16 6 10 14 14 7 8	7 2 5 9 4 9 6 14* 7	11 14 9 15 16 7 10 8* 15 12	n. s. sw. n. w. sw. e. sw.	Jeff. King Sam Smith W.W. Martin John G. Phtz R.A. DeWitt John A. Spence J. H. Wolpers Carlos W. McKinney U. S. Wenther Burgan
Ozark Pluteau. Arcadia Aurora Birchtree (near) Bolivar Dean ## Eldon Farmington Goodland Greenville Hailey Koshkonong Lebanou Loekwood Mountain Grove(near) Neosho Rolla Salem(near) Seligman Seynour (near) Springfield Section means and	lron Lawrence. Shannon Polk McDonald Miller St. Francois. Iron Wayne Barry. Oregon Luclede Dade. Wright Newton Phelps. Dent. Barry Webster Greene extremes	1, 173 1, 542 1, 642 1, 324	46 37 32 33 28 31 16 33 5 2 26 39 21 26 39 27 23 23 25 21 39	49.8 53.2 53.6 55.8 50.6 51.5 51.4 51.6 53.5 48.4 52.0 51.3 57.8 52.1 50.9 53.6 50.6 50.6 51.8	- 5.5 - 2.5 - 3.8 - 2.5 - 1.5 - 4.8 - 5.4 - 3.2 - 4.3 - 7.3 - 4.0 - 2.9 - 0.2 - 2.9 - 4.8 - 5.4 - 5.4 - 5.4 - 3.2 - 4.3 - 7.3 - 4.0 - 7.2 - 7.2	79 81 80 82 84 82 81 80 81 81 80 79 78 78 78 80 80 80 80 80 80 80 80 80 80 80 80 80	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	23 25 25 25 23 24 24 20 22 22 28 20 24 22 21 22 21 22 22 24 22 22 24 22 24 20 24 24 25 26 26 27 28 28 28 28 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20	10† 15 10† 15 15 15 10† 10† 10† 10† 15 10 15 9 15 9 15 15 10†	48 36 41 37 45 51 39 48 46 46 48 39 41 34 35 34 42 31 51	6.22 6.68 7.30 9.14 5.07 5.51 7.99 6.57 9.43 8.11 6.62 8.61 5.30 7.28 6.43 7.17 9.34 6.62 7.01	+1.60 +2.33 +2.58 +1.70 +5.10 +0.61 +1.11 +0.42 +4.46 +3.93 +2.96 +3.83 +1.18 +2.62 +1.88 +3.24 +5.38 +2.76 +2.65	2.04 1.85 1.70 1.36 2.65 2.30 1.48 2.10 3.17 2.23 2.81 1.20 1.55 2.98 3.00 3.78 2.18 3.78	T. 0 0 0 0 T. 0 0 0 0 T. 0 0 T. T. T.	10 9 9 9 10 8 9 8 12 6 11 11 11 8 11 10 9 9 9 9	17 10 16 20 22 7 9 13 12 18 12 13 17 14 17 14 17 12 15 16 19 15	1 11 3 2 1 14 10 5 6 3 5 7 7 5 5 7 6 4 2 2 5 5	12 9 11 8 7 9 11 12 12 9 13 10 10 9 8 8 8 11 9 10 10 9	s. sw. sw. sw. sw. sw. sw. sw. sw. sw. s	Arendia College W. T. Troughton V. H. Kirkendall Southwest Baptist College H. E. Dean E. H. Shepherd Robert Forsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lou Muleare C. S. Crow Mo. Fruit Exp. Sla. H. S. Fisheries Sta. Prof. Elmo G. Harris A. C. Leech Floyd E. Fawver Ira H. Hailey U. S. Wenther Burean
Southwest Plain. Amoret Appleton City Centerview. Clinton Harrisonville Lamar Lamonto †† Marshall Nevada Warsaw Section means and	Bates St. Clair Johnson Henry Cass Barton Pettis Saline Vernon Benton extremes	831 853 872 765 904 980 867 779 862 687	20 33 40 34 50 40 26 38 34 27	52 4 51.0 51.3 50.0 51.2 50.4 52.5 53.2 54.2 51.8	- 3.4 - 5.1 - 4.4 - 3.8 - 5.4 - 4.7 - 1.9 - 1.6 - 3.6	83 83 77 86 82 85 85 81 84 86	1 29 3 1 1 1 1† 1† 1† 1	24 23 22 22 25 22 20 25 23 20	9 15 10 9† 9 9† 15 9	39 41 35 54 42 46 44 34 38 54	5.18 1.82 5.86 2.86 4.85 2.66 2.40 5.86 4.50 4.00	+0.92 -1.38 +1.82 -0.53 +0.70 -1.11 -1.29 +2.07 +0.28 +0.16	2.32 0.80 2.63 0.87 0.82 1.38 0.90 3.05 1.60 3.05	T. T. 0 0 0 T. 0 T. 0 T. T. T. 0 T. T. 0 T. 0 T.	8 6 7 7 13 6 7 6 8 8	11 15 10° 6 16 20 14 15 13	14 8 11° 5 4 6 3 4 8 7	5 7 6° 19 10 4 13 11 9	SW. Se. SW. S. SW. SW. SW. SW.	Andrew Rood W. G. Bigelow E. A. Markey A. E. Derwent, M. D. John H. Patterson Jesse A. Mann J. E. Wbeeler Dr. W. H. Black George A. Kanpp Everett Martin
Northwest Plateau. Bethany. Chillicothe Conception Edgerton Grant City Kansas City Kidder King City Lexington Maryville Oregon St. Joseph Tarklo Trenton Section means and		1, 048 967 916 822	35 18 38 7 23 38 34 2 42 37 71 19 24 31	49.9 49.0 48.6 50.7 48.0 51.4 46.0 52.2 49.3 51.2 50.6 48.2 50.4 50.4	- 1.3 - 4.3 - 3.5 - 3.5 - 3.6 - 6.4 - 1.9 - 0.8 - 2.7 - 3.3 - 4.0 - 2.2 - 3.1 - 3.5	80 85 85 85 82 84 83 85 86 85 88 88 88	1† 1 1† 1 1 1 1 1 1 2 3 1 2	18 20 18 18 19 25 19 23 17 21 23 17 21 23 18 19 17	9† 15 9 9† 15 9 9 15 9 15 9 15	44 54 43 48 41 33 53 42 44 45 39 47 36 54	1.66 2.56 2.00 1.99 1.94 2.32 1.01 1.98 2.19 2.34 2.74 2.03 3.23 2.26 2.16	-1.56 -1.88 -0.81 -1.55 -1.12 -0.82 -2.03 -1.17 -0.57 -0.55 -1.00 +0.06 -1.01 -1.08	0.73 0.96 0.65 1.12 0.76 1.20 0.54 0.90 0.70 1.14 1.00 1.18 1.19 0.57 1.20	T. 0.8 T. T. 0 T. 0 0 0.5 T. T. 1.5 0 0.2 0.2		11 11 9 24 13 13 16 14 14 14 16 8 15 14	10 16 15 0 12 9 7 3 11 17 11 9 9	9 3 6 6 5 8 ··· 7 13 5 7 11 6 7 10	nw. nw. ne. n. sw. s. nw. s. nw. s. sw. nw. se. n. nw.	M. H. Moulton Wm. J. Olenhouse Fr. Adelhelm Hess Fred L Stiff W. P. Spillman D. S. Weather Burean Linn Terry D. B. Oliver Miss Carrie Loomis J. R. Brink Mina Wright D. S. Weather Burean Albert Volker W. H. Estes

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

Reference letters, *, b, *, appearing in the table indicate number of days missing; for example, b, represents two days, etc.

†Also on other dates. ††Received too late to be included in means and summaries. ††Post-office addresses of these stations are as follows; of Dean, Anderson.

Daily Precipitation for April, 1928

	haging																																
	Desturan														D	аус	f mo	nth.															tal.
Stations.		1	2	3	4	5	6	7	8	9	10	111	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		Tot
Northeast Plain.																													-				
Brunswick	Missonri Grand					.11	1.35 1.15	.15							. 80							.08						.06					$\frac{3.27}{2.47}$
Clifton Hill Columbia***	Chariton Missouri		:			$1.00 \\ 1.14$.32 .28	.15				.08	1	.73	T.						.02 .07	.05		T.						Ť.			$\frac{2.50}{2.89}$
Downing	Mississippl Missouri					$\frac{1.57}{2.09}$. 10	• • • • •				.22	.50	T.	• • • •		.02			.14	.28		• • • •									$\frac{3.25}{3.93}$
Fultou	do Mississippi					$\frac{2.30}{1.14}$.39	.05				.05	5	.17	.76	• • • •			••••		••••	.38 .37	.04	••••									$\frac{4.71}{2.53}$
GorinIlannibal*** Hermann¶	do Missonrl	1			.20	$\frac{.96}{2.35}$.41 1.26	.08				.10	.04		T.		.01			т.	.05	$.12 \\ .26$.16	• • • •	Т.								2.61 4.59
Kirksville	Mississippi					2.20	1.10	. 10					. 02	.05	.53			!				.45	.15										$\frac{4.60}{2.77}$
Louisiana	do		1				i.35	.20					. 06		.51							.02											2.64
Mexico	Mississippi Grand	1				.25	1.12	.23				T.	. 10	.25	.85			.05		• • • •	.25												2.74
Monroe City	Mississippi Meramee Missouri				.05	1.60	.29 1.20	.09				1.			.09					••••	T.	80	.32	.05									2.50
St. Charles	Mississippi		• • • •	T.	.62	1.17	.63	1.				T.	.01	.04	3			Ť.	T.		30	.46	.12		T.								4.94 3.02 3.08
St. Louis (2)*	dodo					.30	.05 1.25	.24	.02		• • • •	т.	. 03	.20	72							.30	.25										2.86 3.98
Steffenville	Meramee				.12	2.60	1.34 .60	.16				T.	.05	.60	. . 16						;	.75	.32	.07									5.57 3.60
Unionville	Chariton Mississippi do				.45	2.85	.86	T.						.45	i'.	••••				••••	T.	.24	.03							7			4.88
Southeast Lowlands					.14	.01	.47	.14				.00		.00	.00		.02	.01		••••	.10	.00		•		••••				1			2.75
Campbell	St. Francis Mississippi				.36 .28		$\frac{2.58}{1.72}$								42					••••	.30	2.96	.13	.21				.52					6.60
Carnthersville II Dexter II	do				.19	.16	2.44	2.80	••••	• • • •					. 43					1.00	.21	3.38	.15			Ť.	.11	.31					4.81 8.29
Doniphan	Black Mississippi				.65	2.00	1.53							.63	37					.23	.70	1.23	.10 .43	.10	T.	T.	.26				.22		7.44 6.42
Marble Hill	Mississippido				.45	$\frac{.50}{.20}$	$\frac{1.56}{2.29}$							-,20	.25					.25	.30	3.10	.45				.40				.03		7.46 7.51
New Mndridll Poplar BlnR	do Black				.10	.20	2.90	.06			1				75						.40	2.10	.16	.03				.55					$7.25 \\ 7.22$
Sikestonil	Mississippldo					.36	1.30	.88						. 6-	. .33	.50					.38	2.53	.01	.11				.32			T.		6.71 5.76
Ozark Pluteau.																																	
Arcadia II	St. Francis Neosho				.39 1.23	1.85	.02		Т.	l										.43	.41	.81	.83	.10	т.	т.	1.00				Т.		$6.22 \\ 6.68$
Birchtree (near) Bolivar	Black Osage				.41	1.25 1.36	1.70 .36							.05	3					.61 .15	.39	1.08	.31				.58						7.30 5.69
Caplinger Mills	Osage Neosho				.38	$\frac{1.09}{2.65}$.36	.04				.is	T.	.54	4 T.					.36 .22	.42	1.43	$\frac{.68}{2.44}$.01			1.34						4.91 9.14
Eldon . Farmington Fredericktown	Missonri St. Francis					$\begin{vmatrix} 2.30 \\ .54 \end{vmatrix}$	1.03 1.48	.07					1	.16	57						.18	1.37	.36 .62		T.		0.4						5.07 5.07
Galeun	White				.15	2.62	1.90	.18			::::				.22					.20	. 42	1.68	.40 .67	. 62			.76	.62	.24				5.94 9.62
Greenville	St. Francis				.40	.42	1.95							.46						.25	.26	$\frac{1.48}{3.17}$.70	• • • •		.03	.25	.06					5.51 7.99
Hailey	White Black				1.00	$\frac{2.23}{1.98}$	1.90						:	.18	5 .38					.30 .07	1.30 .80	$\frac{.53}{2.81}$	1.11	.10			1.22	.18	3				6.57 9.43
Lockwood	Osagedo		1		.06	$\frac{2.24}{1.27}$	1.53	.18	T.					.3	3					.35	.63	.84	$\frac{.54}{1.43}$	T.		Ť	1.19	.44					8.11
Mountain Grovell	White				.16	1.30	1.83	T.	Ť.					.10	6						.30	.74	.90 1.17	.05		1	1.10						8.61 5.30
Oweusville II	Gasconade Meramecdo			.08	3.17	1.55	.05	700				Ť.		Γ.	1						.81	.68	.25	.10	T.	.28							4.90 7.28
Salem (near)														.0	5					.08	1.04	1.22	.60										6.43 7.17 9.34
Seymonr (near) Springfield ***	Whitedo				II.OU	11.40	.00							1.1	1		T.			.41	.91	.68	1.23			T. T.	.59				т.		6.62
Steelville	Missouri				4	1.59	.26	.04						.20	6 .46							.17	.97				1.17						3.92 5.69
Willow Sprgs. (near)	White				.10	.23	2.41	.03							06						.53	2.29	.69	.22			.12	.55					7.23
Southwest Plain. Amoret	Osage																														j		
Appleton City Centerview	do Missonri		1		.07	2.32	.17	.01	T.			.0	1	1.1	1					T.	T.	.15	.70 .13		T.	Т.	.65						5.18 1.82
Clinton	Osage				1.40	2.63	.25							1.13	5						T.	.15	.68	• • • •		.60		• • • •			1		5.86 2.01
Harrisonville Joplin*	Missouri Osage Neosho				.57	.38	.86						11	.40	0 .41					.36	i.i0	.35	.60										2.86 6.26
Lamar Lamonte	Neoshodo Missouri			.02	1.38	.46	.82	.07				.0-	T.	.12	35						.08	.75	.40	.45	.05		.70	.23	3]			1	4.85 2.66
Marshall Nevada	do Osage.		1			-90	.45	.05				.05	5	1.0	5						.05	.05	.74				.33	Т		l			2.40 5.86
Osccola Warsaw	do					12.88	.39	.05			1			45	5 .37		1					.33	1.00			т.	.61						6.08 4.50
Waverly II	Missouri				T.	.21	1,20	.08	• • • •	T.			. 14	Т.	.64			• • • •		• • • •		.08	• • • • •	••••		••••		• • • • •					2.35
Northwest Plateau.	Granddo						.50	.47				Т	3		.75 T.													.25					1.97
Bethany Chillicothe Conception Edgerton	do			T.	.08	.73	.42	.08				.08	.09	.02	2 .00						T.	T'.	Ť.		T. T.								1.66 2.56
Conception	Missourido			Т.	T.	1.12	.57	.02	Т.	• • • •		.08	.09	.37	2						т. Т	T.		• • • • •		••••							1.99
Gallatin Grant City Knusas City***.	Grand			1		.64	.57	.Uč					1	.33	3	• • • •					Ť.	T. T.					1.00						1.51
Kidder #f	Grand						.36	.08				.10	8	.68	54	• • • •																	2.32 1.01
King City Lexington	do					.05	.70	.43	.06			.11	21	.39	.52	••••						.10			'								1.98 2.19
Mary ville Oregon	do				.40	1.00	.75	.01	·			Ť.	.02	.56								T.											2.34 2.74 2.06
St. Joseph ***	do				.80	.76	1.19					.07	7	.38	.06									т. Т		• • • • •		• • • •					$\frac{2.06}{3.23}$ $\frac{2.26}{2.26}$
Trenton	crand	1			.43	.50	.5/	.12	• • • •	••••		.08	5	.4(3	••••		••••	••••	••••	.04	.09	••••	1	••••	••••		••••			1		2,20
		1																															
		1									J		1				J J								I		1	J	1		1		

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation.

11 Precipitation measured in the norming; amount then recorded is for the preceding 24 hours.

T. Trace, or less than 0.01 inch.

** Regular U. 3 Weather Burean station; precipitation is for 24-hour period, midnight to midnight.

** Precipitation in the next following measurement; separate dates of fall not recorded.

* Precipitation is for 24-hour period midnight.

	1		I	- 1	- 1	-		- (- 1	[1	1	ſ			T	-	1	1		-	- 1	I			-			
Stations.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18 1	9 20	21	22	23	24	25	26	27 2	8 29	30	BS
Northeast Plain.																								-		1	1	1	
unswick \$ J Maxlmum	83 36	57	80 56	74 60	59 56	55 47	47 31	41 30	50 23	60 24	53 85	54 33	54 36	40 26	51 22	60 23	81	44 3	32 3	58 51 34 38	45	66 38	63	61 38	63		69 8 32 4	1 74 1 50	:: :
olumbia	82 46	57	63	70 58	64 55	65 36	45 32	41 29 43	46 23	57 34	64 39	61	52 34	38 28	48 25	62 36	48	46	34 2	8 54 8 48	43	65, 36	60 47 63	59 39	58 45		67 8 32 5	1 73 6 53	!
yette	82 34	89	56	71 58	64 53	62 47	58 29	27	49 20	60 28	62 31	64 34	51 39	49 21	49 20	61 28	3.5	48 5	29 8	50 53 54 38	41	31	39	61 35	61			76 49	:: :
annibal Maximum	80 42	58	77 60	68 61	64 50	67	42 30	89 29	45	54 34	60 38	60 37	53 45	46 26	26	61 37	54 43	75 .	49 8	66) 51 6 45	58	61 38	57 42	58 33	58	53	66 8	0 70 5 54	
fferson City M Maximum	85 43	87	75 60	70 59	66 55	42 68 54	48 83	45 30	25 50 25	58 30	67 34	64 38	55 42	41 28	50 23	68 29	73		50 F	51 55 36: 42	58	71 40	66 40	60 38	38 57 43	58	G8' 8	3 74	
rksville Maximum	79 42		75 58	71 60	68 43	59 40	42 26	37 26	45 19	57	60 32	61 38	59 42	28 45 22	46 18	60 31	38 55 40	72	60 - t	55 50 30 31	61	62 39,	72 41	65	58 35	57	68 7	3 55 7 72 6 49	
oulsiana Maximum	•	••						• •																					
acon %	81 38		78 57	74 60	58 54	62 45	43 27	41 28	48 20	59 23	63 33	63 33	48 36	39 25	48 19	60 31	62		52 30 3	50 51 32 38		65 38	68	62 31	63	68 33	70 8 33 4	2 72 1 50	
exicoss	83 37	83	79	65	64 55	45 57 51	46 30	28 44 30	49 23	59 23	65 33	63	51 39	39 27	49 23	65 31	62	77	51 6	0 54	60	69	63	60 35	37 59 39	57	69 8	2 71 14 52	
. Louis(1)	79 51	76	73	68 59	66 56	70 44	44 34	45 34	47 30	52 34	64	64	56 48	50 30	45 27	65 36	62 46	76	60 8	58 55	49	67 45	61	59°	51 46	55	64 8	(1) 72 (9) 59	
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/ Mininium	48		61	63	40		29	27	21	34	35	38	42	24	19	31	42		31	33 43		39	42	33	40	38	40	44 52	

^{*,} b, *, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

Winstruments are read in the morning: the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

WBO, St. Louis, 5-17-28 915.

CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION.

GEORGE REEDER, Meteorologist.

VOL. XXXII. COLUMBIA, MO., MAY, 1928.

No. 5.

GENERAL SUMMARY.

While May, 1928, was quite satisfactory from the temperature side, and was quite free from severe storms and frosts, the well established tendency to scanty precipitation over most of the State in March and April continued in May. However, two rain spells of several days each, the first about the middle of the month and the other at the end prevented any very serious injury to vegetation, although oats, wheat, all grasses, and most truck crops were failing fast and much in need of good soaking rains, and soil moisture was still too low for good growth even

The weather was largely favorable for outdoor work, and corn was all planted in good time and the fields were well prepared as a rule, and kept well cultivated. In the southeastern lowlands and most of the Ozark Plateau crop conditions were for the most part in better shape than elsewhere because there more rain fell during April. All vegetation was backward, foliage in general being on the average 10 days behind the nsual.

TEMPERATURE.

TEMPERATURE.

The monthly mean temperature for the State, 62 stations reporting, was 65.8°, or 1.2° above normal. The northwest plateau experienced more warmth than the other sections, the plus departure there being nearly 3°, while there was a small excess in the Ozark region, and, strange to say, an average of nearly one degree deficiency in the southeastern low lands, usually the warmest part of the State. There were some quite warm days, but no hot days, in each decade, the highest temperature occurring in the northern sections, there being relatively fewer southern stations reporting afternoon temperatures of 90° or higher; the lowest temperatures, 32° or lower, also occurred at about five southern stations, Jackson, Goodland, Greenville, Arcadia, and Salem, the minimum being 29°, at Jackson on the 8th. Local frost occurred in the extreme north portion on the 6th, 7th, and 28th, and in the Ozark Plateau on the 7th, and 8th.

PRECIPITATION.

The average precipitation for the State, 97 stations reporting, was 2.84 inches, or 1.86 inches less than the 56 year's average, and more than 4 inches less than May, 1926. The deficiency was quite marked in all sections, ranging from more one inch in the southeastern low lands to more than 3 inches in the northwestern plateau. The first general rain period of any importance began about the 15th and prevailed from two to six days or more, breaking what was beginning to be quite a bad drought for spring. Another two to three-day spell prevailed at the close of the month. Some local heavy rain occurred on the 18th, 22d, and 31st. The greatest amount in any 24 consecutive hours was 2.80 inches, at Lebanon on the 22d; and the greatest local monthly fall was 6.37 inches, at Seligman, Barry County. At Poplar Bluff, more than one inch fell in about 30 minutes, but no damage was reported. The driest county, with a monthly total of 0.78 inch, was Platte, in the northwest plateau.

MISCELLANEOUS PHENOMENA.

Fogs, dense.---At Columbia, 19th. In the southeast counties, 20th.

Frost, light,—6th, and 28th. Frost, heavy.—7th, and 8th. Hail.—Light 18th, 21st, and 30th. Halos, lunar.—2d, 7th, 6th, 10th

Halos, solar.---2d, 7th, 8th, 10th, 12d, 13th, 14th, 17th, 20th, 21st,

Thunderstorms.---2d, 4th, 10th, 11th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22d, 24th, 25th, 26th, 30th, and 31st.

May 15.---In Atchison County, Mo., from the vicinity of Rockport to 7 to 9 miles east of Tarkio, a distance of 16 miles, a tornado swept a path from 50 to 100 feet wide, from 3:30 p. m. to 4 p. m. Damage about \$10,000. No persons killed and none injured.

On the same date, about 6:30 p.m., at Raymore, Cass County, Mo., a tornado traveling from southwest to northeast in a path from 30 to 100 feet wide, destroyed about \$8,000 worth of tangible property. After a few miles the tornado left the earth and did not touch again, as far as could be learned. On May 30, quite a violent wind wind struck in the vicinity of Oregon, Holt County, Mo., referred to as a "near tornado". Damage about \$300.

May 30.---Accompanying a severe thunderstorm heavy hail struck Cuba, Mo. about 4:30 p. m. The stones were large and covered the ground two or three inches deep. Damage by wind to trees, utility companies wires, and some small outbuildings, estimated at about \$400. By hail to windows and roofs \$150.

May 31.---Strong winds did some damage, about \$75 worth in the vicinity of Centerview, Johnson County, Mo. And at Seligman, Barry County, on the same date, a severe electric storm prevailed for 12 hours. Three persons were killed by lightning in one of the berry fields.

145 145 CC 185

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

	fean ric pressure -level).	rela	ean itive idity.	Suns	hine.		W	/ind.		
	an vel			rs.	le e	es.	hour-	Max.	veloci	ty.
Stations.	Mean barometric 1 (sea-leve	7 a. m.	7p.m.	Total hours	Percentage of possible.	Total move- ment, miles.	Average hou ly velocity.	Miles per hour.	Direction.	Date.
Columbia	29.96 29.96 29.94 29.94 29.96 29.96 29.96 29.96	69 69 63 67 64 69 74 63	46 44 43 49 47 53 43	333 370 316 296 336 318	75 90 71 67 77 71	4,981 5,812 6,712 5,565 8,016 6,777 5,892 4,737	6.7 7.8 9.0 7.5 10.8 9.1 7.9 6.4	23 22 51 26 38 33 27 24	n. n. ne. sw. w. sw. w.	30 25 30 30 14 17 4 24

Beginning January 1, 1928 wind velocities are by 3-cup anenometers.

COMPARATIVE DATA FOR MAY.

	7	l'empera	ture.			Precipita	tion.		Nui	nber	of da	ıys.
Year.	Mean.	Departure.	Highest.	Lowest.	Mean.	Departure.	Greatest in 24 hours.	Total snowfall, unmelted.	With .01 inch or more.	Clear.	Partly cloudy.	Cloudy.
1888 1889 1890 1891 1892 1893 1894 1895 1894 1896 1897 1898 1898 1899 1900 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1917 1918 1918 1917 1918 1919 1922 1922 1922 1922 1922 1922 1922 1923 1924 1925 1926 1927 1928	62.1 63.5 62.8 60.7 66.8 60.7 64.6 65.2 66.3 69.4 66.3 69.4 66.3 66.1 63.7 65.6 66.1 63.7 65.8 66.7 65.8 66.7 65.8 66.7 65.8 66.7 65.8 66.9 66.3	-2.3 -0.9 -1.6 -2.9 -3.7 -2.6 -0.7 +0.2 +5.7 -2.0 +0.8 +2.5 +1.9 -0.6 +5.0 +0.7 -1.3 +0.5 +1.9 -4.9 +1.7 -1.1 -1.1 -1.2 +1.3 +3.2 -1.9 -1.9 -1.9 -1.9 -1.9 -1.9 -1.9 -1.9	93 96 96 96 97 91 94 95 103 97 97 96 98 98 98 98 99 99 99 91 101 98 97 97 96 97 97 97 97 97 97 97 97 97 97 97 97 97	300 288 322 288 300 222 288 311 344 229 327 347 327 327 333 331 333 332 342 227 344 237 347 347 347 347 347 347 347 347 347 3	5.35 6.56 3.47 7.80 4.26 7.80 4.08 4.09 4.08 3.99 4.08 3.99 2.56 7.90 5.03 4.87 5.03 4.87 5.34 4.87 5.34 6.92 1.47 7.80 5.49 5.49 5.49 5.49 5.49 6.92 1.47 7.47 7.47	+0.58 +1.79 -1.30 -0.51 +1.12 -0.78 +1.12 -0.78 +4.32 -2.21 +3.13 +1.49 -1.06 +0.25 +2.33 +0.26 +0.10 -2.61 +0.79 +2.15 +0.57 +1.85 -0.57 +1.85 -0.57 +1.85 -0.68 +0.04 +0.04 +0.04 +0.04 +0.04 +0.05	3,90 3,420 3,43 4,466 3,82 4,00 5,50 5,50 5,50 6,50	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 5 6 6 8 17 10 8 9 12 17 14 4 2 10 6 11 5 12 10 10 12 9 13 5 7 8 8 5 12 11 10 10 12 12 12 10 12 12 12 12 12 12 12 12 12 12 12 12 12	5 11 13 13 12 16 12 10 14 15 13 12 15 15 14 12 15 15 11 19 18 16 10 17 17 19 18 16 10 11 11 11 11 11 11 11 11 11 11 11 11	9 11 12 12 11 10 10 13 11 10 10 11 10 10 11 10 10 11 10 10 11 10 10	

					C	limat	ologi	ical I	ata	for	Мау,	1928								
				Т	'emperat	ture, li	ı degr	ees Fa	hr.		Precl	pltation	, ln lne	thes.	Nun	nber	ofd	ays.	110	
Stations.	Counties.	Elevation, feet.	Length of record.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	With precip.	Clear.	Partly cloudy	Cloudy.	Prevailing direction of wind.	Observers.
Northeast Plain. Brunswick Clifton Hill. Columbia Downing Payette Fulton Gorin Hannibal Jefferson City Kirksville Lonisianm Macon. Mexico. Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Unionville Warrenton Keokuk, Iowa. Section means and	St. Charles. St. Lonis Citydo. Shelby Lewis. Putnaan Warren Lee, Ia	652 731 784 876 661 818 700 534 557 969 875 800 875 800 1,062 816 614	48 28 37 6 47 39 35 39 38 6 39 53 15 34 45 55	65.6 64.8 65.7 64.8 65.0 65.1 64.9 66.8 63.6 65.5 65.4 66.6 66.4 64.1 63.9 66.8 66.8 66.8	+ 1.3 + 0.6 + 1.4 + 0.7 + 0.1 + 1.3 + 1.9 + 1.1 + 1.6 + 1.1 0.0 + 1.5 + 1.2 + 1.0 + 1.2	92 89 91 91 91 91 91 92 89 93 94 93 91 91 92 90 92 88 94	10 2† 10 9 9† 3 10 10 10 12 10 10 10 10 10	42 38 40 38 36 33 40 41 39 40 42 43 38 34 41 40 33	1† 28 28 28 8 7† 7† 7† 7 7 12 7 8	42 40 36 38 49 37 38 41 43 39 47 39 47 43 30 29 38 38 37 32 49	2.05 2.21 1.74 1.82 1.29 3.52 2.60 3.28 2.32 2.32 2.05 1.31 2.88 1.19 2.18 2.88 1.19 2.91 2.91 2.91 2.91 2.91 2.91 2.91	-2.84 -2.93 -3.12 -2.59 -3.33 -1.25 -2.01 -1.72 -2.23 -4.16 -2.24 -2.71 -1.53 -2.16 -3.79 -1.80 -3.04 -1.88 -1.38 -2.40	0.88 1.07 0.70 1.15 0.41 1.72 1.74 1.54 0.96 0.50 1.10 0.65 0.26 1.04 0.96 0.78 0.41 2.10 0.87 0.87 1.30 2.10	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	11 10 11 8 10 9 7 8 8 4 4 7 9 8 8 7 11 12 7 6 6 7 8 8 8 8	20 18 12 15 13 22 21 13 20 15 16 16 19 14 9 15	3 6 11 14 13 13 10 3 8 13 4 10 7 8 5 14 8 10 9 9	87 8 2 4 10 8 6 2 5 7 6 8 8 7 7 7 13 7 13 7	8W. 8. 11W. 5W. 8. 11. 8e. 8W. 11. 8W. 8W. 11. 8W. 8W. 11. 8W. 8W. 11. 8W.	O. K. Benecke Dr. A J. Bradsher U. S. Weather Burean James Taylor J. D. Settle Chamber of Commerce J. W. Pullam U. S. Weather Burean Miss Emma Swift Prof. J. S. Stokes J. T. Farrell W. C. Brown Mrs. Abbie Snoddy J. S. Conway L. C. Saeger U. S. Weather Bureau St. Londs University J. C. Jewett Frank Hall Geo. W. Davls Prof. A. W. Ebeling U. S. Weather Bureau
Southeast Lowlands. Campbell Carnthers ville Doniphan Juckson Marble Hill Morehouse Poplar Bluff Sikeston Cairo, Ill Section menns and	Dunklin Pemiscut Ripley Cape Girardeau Bollinger New Madrid Butler Seott Alexander, Ill extremes	314 265 344 428 470 289 339 318 358	2 31 23 36 32 26 23 22 52	66.4 69.3 67.0 64.5 66.0 66.9 66.7	- 0.2 + 0.1 - 1.3 - 0.3 - 1.1 - 1.5 - 0.7	89 88 90 88 88 88 90	10† 30† 30 10 10 10 	39 45 35 29 35 40 47 29	88889.9.888	41 35 45 46 46 42 32 46	2.75 3.64 3.71 3.46 4.05 2.37 3.29 1.75 3.13	-0.62 -0.45 -0.90 -0.18 -1.79 -1.74 -1.96 -1.09	1.10 1.21 0.96 0.82 0.92 1.11 0.92 0.39 1.21	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9 6 8 12 9 9 7 12 8	15 24 20 11 17 22 20 	8 0 10 6 9 3 7 6	8 7 1 14 5 6 4 	n. s. sw. s. w. sw. s. n.	Jeff. King Sam Smith W. W. Martin John G. Putz R. A. DeWitt John A. Spence J. H. Wolpers Carlos W. McKinney U. S. Weather Burgan
Ozark Plateau. Areadia Aurora Birchtree (near) Bolivar Dean ‡‡ Eldon Farmington Goodland Greenville Hailey Koshkonong Lebanon Loekwood Mountain Grove(near) Neosho Rolla Selem(near) Seligman Seymonr (near) Springfield Section means and	Polk McDonald Miller St. Francois 1ron Wayne Barry Oregon Laclede Dade Wright Newton Phelps Dent. Barry Webster	1,000 934 934 1,000 381 1,350 958 1,265 1,073 1,463 1,011 1,099 1,173 1,542 1,612 1,612	46 37 32 33 28 31 16 33 5 2 26 39 21 26 39 27 23 23 25 21 39	63.0 66.6 65.6 67.2 66.1 63.8 63.6 67.8 63.2 66.6 65.6 65.6 64.5 63.9 65.4 63.1 65.2	- 1.6 + 0.7 + 0.4 + 1.4 + 1.6 + 0.6 - 0.7 + 1.0 - 2.4 + 1.7 - 0.6 - 0.0 - 1.4 + 0.5 - 0.3 + 1.6 - 0.7	88 90 90 92 91 85 89 88 90 92 87 86 86 87 87 92	10 30 30 30 10 10 10 30† 10† 10† 30 9 10 30 10 30 10	31 43 36 39 41 30 30 30 43 42 42 42 42 45 30	8 5 8 5 28 8 8 9 28 5 5 7 8 8 5 28 5 8	42 35 42 43 43 44 49 44 42 24 34 39 41 36 41 37 38 28 49	3.10 5.25 1.94 4.58 2.32 5.01 3.51 3.95 3.16 4.34 1.49 3.59 4.40 5.03 5.26 6.35 6.35 4.34 1.49	-1.68 -0.21 -2.37 -2.54 -0.49 -1.15 -1.68 -1.27 -3.59 -1.26 -1.67 +0.02 +0.72 +0.72 +0.78 +0.35 -1.58	0.87 1.85 0.76 1.10 1.29 0.95 1.00 1.47 1.96 1.02 2.80 0.99 1.41 1.09 1.25 2.21 2.21 2.21 2.84		10 7 5 9 7 12 6 7 7 5 8 6 4 4 11 6 10 10 10 10 10 10 10 10 10 10 10 10 10	23 18 21 22 4° 13 13 19 25 14 ^b 20 17 22 14 ^a 19 17 19 23 18	1 7 7 5 2 18° 14 12 6 5 6 6 3 6 3 10° 6 8 5 6 7	7 6 5 7 4 6 6 6 1 9 5 8 8 6 6 6 6 7 2 6	s. nw. n. e. sw. ue. s. s. e. sw. nw. sw. nw. sw. mw. sw. mw. s.	Arcadia College W. T. Troughton V. H. Kirkendall Southwest Baptist College H. E. Dean E. H. Shepherd Rohert Forsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lou Mulcare C. S. Crow Mo. Fruit Exp. Sta. U. S. Fisheries Sta. Prof. Elmo G. Harris A. C. Leech Floyd E. Fawver Ira H. Hutley U. S. Weather Bureau
Southwest Plain. Amoret. Appleton City. Centerview. Clinton. Harrisonville Lamar Lamante Marshall Nevada. Warsaw Section means and	Johnson Henry Cass. Barton Pettis Saline Vernon Benton	831 853 872 765 904 980 867 779 862 687	20 33 40 34 50 40 26 38 34 27	67.0 67.2 66.8 65.8 66.2 67.4 66.2 67.0	+ 1.9 + 1.9 + 1.6 + 1.8 + 0.3 + 2.7 + 1.6 + 1.2 + 1.6	91 93 86 94 90 95 91 92 95	30 10+ 10 30 30 30 30 30 10+ 30	44 42 44 42 41 42 41 42 43 39 39	*5† 55 55 55 55 58 8	36 41 33 39 35 41 35 45 45	2.25 2.92 3.04 1.28 2.31 1.57 1.97 2.75 2.26	-3.29 -1.74 -2.40 -3.53 -3.15 -3.38 -3.75 -2.48 -2.97	1.09 0.97 1.00 0.52 0.90 0.50 0.55 1.45 1.45	0 0 0 0 0 0 0 0	798899 668	16 15 16 5 21 17 21 16 16 16	12 14 10 7 4 12 3 10 9	3 2 5 19 6 2 7 5 6	SW. SW. SW. SW. SW. SW.	Andrew Rood W. G. Bigelow E. A. Markey A. E. Derwent, M. D. John H. Patterson Jesse A. Mann J. E. Wheeler Dr. W. H. Black George A. Kanpp Everett Martin
	Livingston Nodaway Platte Worth Jackson Caldwell Gentry Lafayette Nodaway Ilolt Buchanan Atchison	963 1,020 1,095 688 1,169 1,048 967 916 822	35 18 38 7 23 38 34 2 42 37 71 19 24 31	66.6 65.4 66.2 67.6 65.3 67.8 63.8 68.2 65.3 68.0 67.2 64.3 66.0 66.3	+ 4.0 - 1.7 + 4.2 + 3.0 + 0.7 + 3.8 + 4.2 + 1.0 + 2.7 + 1.2	90 92 93 90 89 91 89 91 92 91 91 91 93	9 9 30 9† 30 9 30 9 9 9 91 91 91	35 35 40 35 39 49 39 42 42 42 44 43 8 42 35	28 28 12 5 28 13 12 7 12† 12 1 1 6 5 5	43 45 39 46 39 30 40 38 43 39 41 47 40 47	1.52 1.72 2.19 0.78 1.22 2.34 0.79 2.40 2.92 2.42 2.03 2.80 1.56 1.92 2.84	-3.46 -2.99 -2.58 -4.67 -3.51 -2.31 -4.42 -2.66 -2.83 -2.44 -2.21 -1.86 -3.78 -3.06	0.56 1.12 0.21 0.40 0.78 0.30 1.40 1.22 0.83 0.99 0.90 0.53 1.40	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 6 8 7 7 9 6 8 6 8 7 10 8 7 8	12 18 11 22 12 14 16 16 16 16 16 16 16 17 19 15	11 7 16 2 17 12 9 12 8 13 12 10 8 11	8 6 4 7 2 5 6 6 3 7 2 3 8 4 5 6	nw. e. nw. s. sw. s. sw. s. sw. n. se. se. se. ne. ne. s. sw.	M. H. Moulton Wm. J. Olenhouse Fr. Adehlelm Iless Fred L. Stiff W. P. Spillman U. S. Weather Bureau Linn Terry D. B. Oliver Mlss Carrie Loomis J. R. Brink Mina Wright U. S. Weather Bureau Albert Volker W. H. Estes

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

Reference letters, *, b, *, appearing in the table indicate number of days missing; for example, b, represents two days, etc.

†Also on other dates. ††Received too late to be included in means and summaries. ††Post-office address of Dean is Anderson.

Daily Precipitation for May, 1928

									Dai	ly I	Prec	ipi	tati	on :	for :	Ma	y, 1	928	8														
															I	Day	of me	onth	ı.														al.
Stations.	Drainage- basins.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Northeast Plain,			<u> </u>								-	<u> </u>		-	1				-									<u> </u>					
Boonvilled	Missouri Grand					.07						.04	.06			.4	63 .88	.03	5 .03	2	.10			••••				.02		.07		.28 .30	$\frac{1.71}{2.05}$
Clifton Hill	Chariton Missonri				.03 T.						T.	.05			. T.	.6	0 .88 0 1.07 8 .02 0 .05	.09	5 .1: 9 .4:	2	.01					Ť.	.20		.07	.05	.22	.04	2.21
Downing	Mississippi Missouri				.03							1.04			15	.10	0.05	.03	1.1	2 .11		.24		••••					.08		.13	.Uo	1.29
Fulton	do Mississippi dodo			1	02	.02						1.18	.01		. T.	1.13	3 .24	· //	1.7	4	01	.21		• • • •		.т.	····		····	.06	.08	.76	$\frac{3.52}{2.60}$ $\frac{3.28}{3.28}$
Hermannif	Missouri					.06							.03			.03	1.08	.0	1 .0.	2	.03	.30						.01		.05	.04	.23	1.92 2.32
Kirksville	Mississippi do															.50	15					1.15										.25	1.05
Macon																																.65	$\frac{2.33}{2.05}$
Milan II	Chariton Mississippi Grand Mississippi Meramee Missouri Mississippi do	::::		::::	.08 T.							.38				.15	6.60 2.18	T.	.20	6 .08	3	.06		••••		••••			T.		.16	.08	1.74
Pacifie 1	Missouri				.10	.05	•					.04	.05	• • • •		.5	1.40 1.04	.35	7.			Ť.		• • • •		····	Ť.	.10		.25	1.05	.16	
St. Louis (2)* Shelbina	dodo				.10						T.	.05			. 36	.68	.00	.57		6 02		.02		••••		.01	.06		.03	.09	.13	Ť	2.18 2.88 1.19
Steffenville	do				T.	··i0					ļ	.45	10			.30	20	.38	2.10	0.03	.34	.05	13					02		Ť.	.05	T.	3.15 3.55
fluionville	Chariton Mississippi do				T.							T.			Ť.	.8	35 7 .66	.10				.10					T.	T.		.30	.12	.15	$\frac{1.92}{2.91}$
	do	••••		••••	.01	••••					.15	.01		• • • •		.7'	7 .53	Т.	.9:	2		.07	• • • •	••••	.09	••••	T.	••••	,	T.	T.		2.55
Southeast Lowlands Campbell Cape Girardeau	St. Francis Mississippi	.04				.36										.0	1 .40		.0.	1 .18	5		1.10	.10								.58	2.75 4.00
Caruthersyille Dexter	do St. Francis				.44													, U	5	G			1.20		1						.12	1.21	
Doniphan	Black Mississippi				.25	.63										.30	7 .01	.08	355	$\frac{2}{2}$. $\frac{96}{02}$.52	.53 25	• • • •		••••				.06	.46	.75	3.71 3.46
Marble Hill	Mississippido				.45	.30						т.			25	.20			. i.	5 .04	.60	1.11	.30			.14					.48	.92	4.05 2.37
New Madrid	Black	.08			::::	.33										.0.	03		::::	36	.20		1.60	.29		••••	.10			Τ.		.25	$\frac{3.41}{3.29}$
Sikeston II. Cairo, III.	Mississippi do			::::	∵i;							T.			03	.0.	Ť.	Ť.	i.i	2 .39	.04	.26	·:i9			.03	Ť.			.04		·.26	i.75
Ozark Platean.	St. Francis					30								8		7.	2 .60		1		36	08	.39			1.4				<u> </u>	.11	87	3.10
Aurora Birchtree (near)	Neosho				12		• • • •					• • • •		• • • •	07	.5	5 T	.83	1	1.21		T.	1.85	••••		••••	• • • •		Т.			.70	5.25
Bolivar	Osage				т.	Ť.						.09			Τ.		7 .70	.44	4	т.	Ť.									.02		.54	1.86
Dean	Neosho Missouri				.06	Ť.							.18		T15	.40	1.29	.80 T.	.2	5 .47	.06	.28	1.10					т.		.07		1.07	4.58 2.32
Farmington	St. Francis					.00							.00				0.01		1.		.00		1.00							.20	1.00		0.07
Galenniii Goodiand Greenviile	White														05	.3	5	.10	0	1.00	····	.82	.32	••••		····					.82	.43	$\begin{array}{c} 2.35 \\ 3.47 \\ 3.51 \end{array}$
Hailey	White				38										05		. 42	. 62	2	4 69		25	1.47	1.96								.90	3.95 3.16
Lebanou Lockwood	Osage			I		.27							T.			T.	.34	.4-	3:3:	2 T.		.17	2.80										4.34
Mountain Groves	Osagedo				.46	.09 T.						T.			16	.2	2 .62	.2:	2 .2	1 .10	03	T.	1.41						T.	.08		1.05	3.59 4.40
Owensville	Moranaa					.10					'd'.	4,10	,			-4	00.11	.00	.10	1 0	.30	1.00	.10	• • •	• • • •	• • • •			4.	.10	1.20	20	E 00
Salem (near) Seligman Seymour (near)	Neoshodo White				.14			ļ:				····	.08		T.	.5	1 1. 5 .18	.8	1	78	3	.25	1.76 1.38	••••		••••				.04	.40	2.21	5.26
Springfield *** Steelvllle	do			Ť.	.01	21		1				r.			.21	.0.	63	.9'	7 .0	1 .17	.02	1.04	.48	••••		• • • •			.03	.01		.93	$6.05 \\ 3.97 \\ 4.43$
Stover III	Meramec Missouri Osage White				Ť.							.13	.02]	.2	$\frac{1.25}{1.95}$.80	0 .0	1	T.	.60	09			.04		T.		.08		.82	3.34
Tuscumbia	White		• • • •		.03	.20			•••	····			••••			. 10	.49	.0	5 .13	3	.04	••••	1.15	••••		••••				.02	••••	••••	2.21
Amoret	Osage																1 1 00				·								·	·			2.05
Appleton City Centerview Clinton	Missouri				т.							.14			09	.0	1 .81		00	6 .08	3 .21	••••	••••					.j	1.	T.	.56	.47 .97 .75	2.25 2.92 3.04
Concordia	Missouri	1															.1.74		3:	1 .08	5									.12		.75	2.97
Joplin*Lamar []	Neoshodo			Т.	.01 T.						T.				18	.10	0 .01	.6	0.0	1 .80	T.	.32	.08					T.	.04	T.		2.05	4.17 2.31
Lamonte	do			.02								1 .20			02	.2.	.11		0	6				••••					.03		.38	.50	1.57 1.97
Nevada Osceola i Warsaw	Osagedo				T.			 ::::				.20	.40	•••	25 . T.	.2	$\frac{1.30}{1.55}$.50	6 .0	2	.15	T.		• • • •	••••	••••						.95	3.72
Waverly 11	Missonri					.03		ļ.:::	••••			.04	.06			.29	38		70	5		.02				••••				i2	T.	.38	2.75 1.90
Northwest Plateau. Albany	Grand						ļ			ļ		.22				.23	3 .64				l	.35								.24			1.68
Bethany	do		.03	Т.	.15	T.					T.	118			03	.3	.90	Ť.	1							T.	T. T	т.	Т.	.03	Т.	.38	1.52 1.72
Edgerton	Missour				21				••••	••••	• • • • •		••••		04	1.1	2 .05 7 .12		Т.		.02	.04 T.			••••	.05			.08	T. .01	T. T.	.15	0.70
Gallatin II Grant City Kansas City***	Grand do do Missouri Grand Missouri		T.		.28	Ť						.48		••••	02	.40	.26		00	3		····					····		T.		rii T	.02	0.89 1.22 2.34
Kidder II	Grand			Ť.	.15	Ť.						1.00		• • • • •		. 1.	. au		• • • • •			.00		• • • •	• • • • •	• • • •		••••		.07		1.	0.79
Lexington Maryville Oregon				т.	.83	.03						.20				.25	$\frac{21.40}{1.22}$.03	3 .0°	7										.12		.33	$\frac{2.40}{2.92}$
St. Joseph***	do		T.	.29	7°.			1	••••		13	.48			17	.6	3	T.			.12	T.							.06	.05		Ť.	2.42 2.03
Tarkio	(frand		ή.	.68	.18				••••			.05			33	.30	.05	.22	ή.			'n.				• • • •				.05	.27	.15	2.40 2.92 2.42 2.03 2.80 1.56
															1																		
	6									1	1		1						1	1													

Except as otherwise indicated observations are generally made late in the afternoon, near smuset, and precipitation recorded is for the 24 hours ending at the time of observation.

*** Regular U. 3

**Weather Bureau station; precipitation is for 24-hour period, midnight to midnight.

*** Precipitation in the next following measurement; separate dates of fall not recorded.

*** Precipitation is for 24-hour period midnight.

							Dai	ly '	- Ten	per	atu	res	for	IVI	ay,	19:	28														
Stations.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17 1	18 1	19 2	0 2	22	23	24	25	26	27	28	29	30	31 M	lean
Northeast Plain.				1	1	I		1	1	1	-	1		1							1						1		1	T	
Brunswick \$	82 42	87 45	88 64	60	78 42	75 43	75 45	81 45	91 50	92 59	72 57	69 43	75 46	80 51	73 52	78 58	80 62			81 57	2 83	: 50		81 55	85 54	71 49	78 42	83 42	81 53	59	79.5 51.6
Columbia Maximum	78 44	89 60	88 67	76 48	74 41	73 46	70 44	78 45	88 52	91 64	71 55	63 45	72 46	77 53	71 61	79 59	62	65	80 61	79 5 60 8	3 79 9 56	55	3 50	78 57	79 52	69 50	74 40	79 56	81 51	59	77.7 53.7
Fayette	81 38 77	87 45	88 59	66 53 75	78 38	76 40	74 43	80 43	91 42	91 56	72 53	67 43	74 43	79 51	79 56	84 57	59	61		55 8	5, 8; 6 5;	5/	45	81 54	84 47	78 46	84 36	37	84 56	57	80 7 49.3
Hannibal Maximum Minimum	52	53 53	88 63	51 71	74 43 75	71 42 74	69 42 73	76 41	88 50	91 63	69 54	63 43	71	76 53	73 61	77 62	62		78 60	56 5	3 78 9 51	50	51	75 58	55	66 51	72 40	76 55	79 55	(f)	76.3 53.5
Jefferson City M Maximum Minimum	81 48	90 54 82	86 63	67	46	47	47	79 41	89 48	92 56	70 58 72	66 46	75 44	80 53	71 58	86 60	78 60	62		60 4	0 75 58 58	58	5 52	78 58	55	71 53	76 46	83 55	89 55	59	79.2 51.5
Klrksville	78 45	41	86 43	83 50	86 43	73 43	70 39	79 43	89 52	84 62	54	63 39	69 41	75 46	72 60	73 58	58	79 55	81 56	52 8	79 50 50	5'		84 62		69 48	75 40	81 39	77 51	68 53	77.5 49.6
Maeonss	81	90	88	66	75	 76	73	81	00	94	72	69	74	77	72	79	80	82	81		4 80	1	88	81	70	68	75	80	83	73	78.9
Mexicolly	45 81	52 90	63 89	65	42 75	45 72	40 70	45 80	92 53 91	60 93	54	41 66	42 73	48 76	53 69	59 80	60 79	63	57 83	54 5	5 5	50	51	59 76		47 69	40 76	49 81	55 87	55	52 1 78.5
St. Louis(1)	58 76	50 84	62 86	72 67 76	43 73	43 73	40 67	40	44 86	56 91	70 55 65	40 63	41 69	50 77	56	60 77	61 76	63	59 81	57 1	5 55 5 79	56	3 48	56 77	55	49	40 72	50 73	54	58	52.4 76.1
Unionville	56 78	59 83	61 84	53 80	49 75	54 73	42	40 75 48 80	56 88	64 84	56	46 70	46 73	54 76	70 62 70	60 72	65	66	68 80	65 (5 6 5 80	6:	52	64 84	79	71 57 72	40 72 52 75	56 78	59 80	61	57.2 77.9
Warrenton	44 77 49	50 88	55 88	50 83 57	44 73	40 71 47	73 38 70	46 77 43	54 87 50	62 92	72 54 89	34 66	40 72	46 78	60.	57 82 59	55 79	56 84	58 81	48 80	60 45 5 78	5.	52 82	60 79	54 75	46 71 52	40 72	56 80 53	45 85	75	49.9 78.7
Southeast Lowlands.		54	- 1	- 5	44		41			61	55	42	43	49	1		62	64	63	62 8		60	47	66			42	-	56	_	53.8
Campbell	80 49	85 48	86 51	78 59	72 53	76 46	69 48	74 39	82 40	89 47	76 60	70 51	77 45	77 55	75 60	79 62	80 61	84 63	77 63	61 8	31 7° 57 59	57	51	85 56	49	79 60	76 44	78 55	87 55	63	79.1 53.8
Caruthersville Maximum Minimum	76 48	84 57 86	84 58	84 65 80	53 73 55 77 45	75 50	75 51	74 45	83 48	87 58	87 64 77	76 58	75 50	77 60	72 65 72	81 65	81 66		85 65	65 6	8 64 64 62	86 67	57	82 60	55	81 64	81 55	77 60,	61	64	79.8 58.8
Doniphan	85 42 78	48	52	47 80	45 76	75 48 73 42	72 46	35	84 39 82	89 49	57 83	69 53	69 55	70 66	72 62	79 62 77 60	84 62		78 60	60 !	64 62 69 77 67 57	59	50	87 55	81 50	85 59 75 51	80 54 72 43	86 50	90 45	63	80.7 53.3 77.7
Poplar Bluff Maximum	42 79	43	58 86 52 85 55 85 51	60 78	49	42 79	71 45 75	74 45 72 35 72 29 77	39 82	88 42 88	58 73	67 46 71	74 38 76	81 55 75	62 73 61	60 77	79 62	62	80 63	57	78 78 59 51 60 78	5.	50	57.	74 46 79	51 81	43	72 53 78	82 55 87	58	51.3 79.7
Sikeston	43	55		60	76 52	44	47	39	40	48	58	51	45	56	72 63	64	84 62	63	65	61 ;	59 59			88 55	48	59	45	56	55	64	54.1
Cairo, Ill. Maximum	77	81	84	79	69	72	64	7i	82 50	88	72	64	74	77	72	78 65	80	81	78		4 7	78	77 1 56	79	75	76	71	75	85		76.2
Ozark Plateau.	50		60	60	53	52	51	47	- 1	60	56	51	48	58	63		66	66	63		53 63	1		61	55	56	53	56	61		57.6
Areadia///	80	44	60	75 66	72 46	73 39	68 43	76 31	79 39	88 54	69 59	65 47	71 36	75 45	67 53	77 61	77 62 78	83 60	80 60	78 58	56 70 57 50 57 78	5	1 44	80 53	46	72 53	71 40	75 51	85 51	58	75.6 50.5
Aurora) Maximum (Minimum	80 50 82		62	76 49 87	70 43	74 50	77 46	79 46	88 53	87 61	81 61	70 47	73 51	71 56	71 58	81 61	59	78 62	78 58	59	57 75 51 45 74 7	55	2 50	81 62 83	54	58 75	75 48 77	58 ₂	90 61 90	63	78.7 54.6
Birelitree	84 83	52	83 59 87	50 69	72 42 75	74 45 74	71 47	77 36 79 42 74	81 42 80	87 53 92	77 58	67 52	74 44	70 56 80	70 59	79 63 80	79 63 76 62 82 65 82	82 63 81	80 60 81	83 57 78 60	51 49 74 7 55 50 73 79 58 50	5'	51	55 80	48	56 73	41 76	79 55 83	53 90	62	$78.6 \\ 52.7 \\ 80.1$
Farmington Maximum	48 77	50	58 88	67 75	42	46 70	72 44 69	42	89 46 84	50 92	75	64	67	42 82	74 54 67	59 78 61	62 82	61 84	61 82	60 78	58 5 58 7	5	61 49	50 78	50	52	41 70	45 67	53 85	57 5	52.1 76.3
Koshkonong Minimum Maximum	49 83	50	58	60 75	71 45 72	43 77	42 72	34	44 85	55 89	58 78	44 74	38 74	49 70	61 70	61 81	65 82	62 82	62 79	78 58 83	57 5	5		61 84	48	72 57	44 80	49 78	53 89	57	52.5 79.3
Lebanon M Maximum	50 80	55 86	58 83	59 64	48 70	53 71	49 70	78	43 85	58 88	64 72	54	46 74	56 72	59 71 55	63 81	62 75	65 79 59	61 80	61	58 50 58 7	5 8	9 54 0 80	61 78	55 80	70	50 75	56 79	59 88	77	56.4 76.7
Mountain Grove \\ \ Maximum	44 85	84	83	65	40 72	40 74	42 75 45	44 79	44 83	51 92 55	58 76	68 48 70 48 72 54	46 74 42 74 43 75 49	44 72 54	55 72 55	58 82	62 75 59 79 58 78 58	80	59 81	84	56 5: 70 7 :	8	4 84	45 83	81	50 77	39 80	40 83	53 89	72	49.6 78.8
Neosho	46 82	84	83	77	42 71	48 74	74	44 80	50 85	85	58 83	48 72	43 75	54 75 59	73	59 78 59	58 78	58 75 61	58 79 57	55 78 56	55 55 71 7 50 5	5, 8	2 81	56 80	81	54 81	77 42	53 83	56 87 55	87	52.3 78.9 52.3
Rolla	41 82 47	84	80	68	38 68 45	40 69 51	36 72 46	39 78 43	50 87 51	63 85	60 68 55	68 48	49 73 43	59 71 51	58 70 60	81 65	58 78 61	77 61	57 71 61	76	50 50 57 7 56 5	7 7 5	6 81	57 75 63	47 78	57 67 55	67	83 57 72 56	72	70	74.5 54.5
Springfield Maximum	79 51	85	82	70	69	72 51	71 49	75 50	84 56	62 87 63	71 59	68 52	72 48	68	71 59	79 62	76 59	78 65	76 60	78	56 7 50 5	8 5	0] 78	80 63	79	71 59	42 77 43 67 50 74 51	79 58	72 63 87 61	72	75.8 56.4
Southwest Plain. Amoret			•••				10						- 1				3														
Appleton City Maximum	81				74	77	74	81	89	88	74	68	75	74	74	81	76	81	81		56 7		5 84	82	86	81	79	85	91	80	79.8
Centerview Maximum	47 83	57 89	62 78	50 63	44 75	48 78	45 79	47 85	53 92	63 93	52 90	48	44 75	51 75	58 76	58 80	60 78	64	59 81	57 81	55 5 68 8	2 5 1 8	8 55 7 86	63 85	55	53 72 50	48	56 83	55 93	82	54.3 80.7
Clinton Maximum	52 80	60 83	64 81	48 80	42 72	45 72 50	46 71	47 79 46	51 84	63 86	56 85	67 47 66	44 70	51 68	58 74	57 79	62 79 61	79 59 79	59 78	-56 74	54 5 74 7 57 5	6 8	2 81	58 82	57 83 60	50 83	81 45 70	54 82	5 5	78	53.7 77.7
Harrisonville Maximum	60 83	88	84	59	44 78	78	47 75	84	54 89	65 90	55 67	58 66	48 73	54 67	60 73	61 82	61 79 58	66 82	60 84	60 82	64 - 8	2 8	5 54 8 88	85 58 82 55 85 52 82 53 83	89 51	83 52 77	46 80	55 89	56 94 57	82	55.8 80.0 51.5
Lamaryy	80 80	86	84	50 55	42 74	46 77 45	44 75	45 81	53 88	60 89	50 70	48 73 53	44 76 50	46 70 55	53 75	56 81	58 77 61	60 78 61	55 80	82 55 82 56 83 59	54 4 64 7	8 5 6 8	4 80	82 50	84	48 74	80 45 80 48	53 83	90 59	78	51.5 78.3 54.0
Lamonte	46 86	90	88	71	41 78	77	43 75	48 83	53 91	59 94	57 72 53	68	68	80	60 76 59	62 81	81	86 65	59 83 59	83	64 7 55 5 71 8 58 5	2 5 2 8 4 5	1 89 5 49	83 63		56 74 46	83	52 85 54	95 54	86	81.5 53.3
Marshall Maximum	46				4 2	••	46	45	53	62	53	49	49	44	59	59	62														
Nevada	80 45		84 60	72 51	73 43	78 46	74 45	78	80 60	88	71 52	70 48	75 45	69	75 60	81 61	75 60	80 64	80 59	80	66 7 5 5 78 8	7 8	5 82 4 51 5 83	82 61	85 54	75 55	78 48	80 50	91 56	87 57	78.6 53.8
Warsaw Maximum Minimum	82 42	89	86 65	80	75	76 42	75 44	48 82 39	89 44	62 92 62	83 55	69	76 45	53 77 54	75 59	81 60	81 61	81 65	81 61	80 55 82 56	78 8 58 5	0 8 5 5	5 83 1 47	80 65	85	81 51	78 48 79 40	84 53	92 52	82 62	81.3 52.7
Northwest Plateau. Chilleothe \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	83			63	78	76	75	83	- 3	91	73	67	74	- 1	74	76	83	84	83	82		2 8	4 89	83	86	72 46	/ V	84	86	76	80.2
Grant City Maximum	40 81	55	64	54	40 76	41	42 75	46 83	92 49 89	61 83	52 70	41 64	44 72	77 50 76	58 68	58 73	58 81	63 78 62	56	51 76	74 8 53 4 72 7 50 4	9 8	3 45 5 89	82	86	72	35 78	52 82	48 80	57 75	50 7 78.2
Kansas Clty) Maximum	43 82	56 86	68 84	48 66	48	47 75	45 75	47 84	53 90	63 88	52 67 52	40 62	46	50 66 55 75 48 73 51 72 51	58 72	58 73 56 77 58	56 78	62 83 65	79 57 81	78	50 4 65 7	8 8	60 61 5 87	81	55 87	46 71	80 35 78 39 77 53 78	82 53 82	53 91	57 84	52.4 78.3
Kidder\\\	56 81	64 86	66 85	60	68	55 75	50 72 40	. 54 83	60 89	62 86	68	49 64	72 49 71 43 75 45 71 49 76	55 75	58 72 58 72 51 77 59	76	64 79 57	65 83	60 81	60 79	54 5 71 8	0 8	62 84 88	82	87	54 72	53 78	58 83	62 83	60 77 56	57.3 78.0 49.5
Lexington Maximum	43 83	88	87	50	77	43 78	76	43 85	50 92 57	57 92 66	50 73 53	39 68	75	48 73	77	56 78 59	57 80	83 60 85	54 84	53 82	73 8	3 8	1 51 57 58	81	87	72 42 76 50 72 46 81	40 80 46	50 86 56	55 93 58		81.9 54.6
Maryvllle) Maximum	86	87	86	55 75	75	78 46 77 48	42 75	47 83	90	88	71	47 64	71	51 72	59 69	7-1	81	64 79 61 81	61 78 55	60 76 50	71 8	0 8	58 54 55 89 59 55	82	2 87	72	78 44	82 50	80 59	75	78.6 52.0
Oregon Minimum Maximum Minumum	43 85 49	89	84	75	78 43	82 47	46 79 49	46 85 56	56 92 60	62 89 65	50 72 52	42 71 49	76 51	68 52	71 58	55 76 57	82 60	61 81 61	82 56	77 56	72 8 50.	4 9	99 58 90 89 56 59	87	92	46	80	85	89 60	85	81.5 54.4
St. Joseph Maximum	85 44	88	84	64	76	82 47 77 46	76 50	85 54	91 62	87	72 52 71 54	42 66 45		68	71 59	57 75 58	81 62	80 64	79 59	78 55	72 8 52 -	1 8	88 88 57 59	88	90	72 49	76 45	53 83 55	88 61	84 59	79.4 55.0
Trenton	84 51	80	87	81	78	70	77 48	84 44	91	86	68 56	67	69 50	54 75 47	71 59 71 64	76: 62	82	81 57	82 56	78 55	70 8	92 17	78 88 51 58	86	83	77	76 45 78 47	83 49	83 50	80	79.0 53.1
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^{*,} b, c. etc., Indicate respectively 1, 2, 3, etc., days missing from the record. Winstruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

WBO, St. Louis, 6-18-28-925,

Vol. XXXII.

CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION.

GEORGE REEDER, Meteorologist.

COLUMBIA, MO., JUNE, 1928.

No. 6.

GENERAL SUMMARY.

June, 1928, was an outstanding cool, wet month in all Missouri. Only one June in about 40 years (1903) was as cool. With a rainfall of 11.17 inches for the State as a whole it was not only the wettest June but the wettest of all other months in 60 years, the previous record for wetness going to July, 1875, with 9.77 inches.

The highest temperature reading reported was only 91°, in the southwest part of the State, the lowest maximum for any June of record; while on the other hand the record low temperatures of previous Junes were quite closely approached they were not equaled.

Rains were excessive in all sections, but with from two to four times the normal in central, eastern, and southeastern parts, most creeks and rivers, except the Missouri River, reached record flood stages, destroying thousands of acres of crops. Upland crops were damaged by washing of the soil, and replanting of fields was common. Wheat, oats, pastures, and meadows, considered much below the average at the close of May, made excellent gain in condition and matured to very fair yields. However, harvest was delayed by wet fields, and there was some lodging and overripe grain.

Thunderstorms were frequent and severe, but there were relatively few violent winds, and almost no extensive damaging hail.

TEMPERATURE.

The monthly mean temperature for the State, 66 stations reporting, was 67.7°, or 5.8° below normal. It was the second coolest June of record, being only 0.4° warmer than the same month in 1903. Temperatures were persistently below normal, rising above normal on not more than six days during the month. Afternoon maxima were 90° or higher at only four stations on one day. During the first week, night temperatures were in the middle 40's, although such values, and even lower, have occurred in other Junes.

PRECIPITATION.

The average precipitation for the State, 97 stations reporting, was 11.17 inches, or 6.50 inches more than the 56 years' average, and the largest excess of any June of record, and in fact the wettest of all other months, the previous record being 9.77 inches in July, 1875. Rain fell on from 11 to 20 days; and total monthly amounts varied from about 5 inches at Hannibal to 22 inches at Jackson. Across the southern-third of the State amounts were from three to four times the usual; and in the east and central-eastern counties from two to three times the normal occurred. Flood damage extended over nearly all bottom lands; many of the smaller streams reaching record stages. Excessive downpours occurred on several dates, 7.34 inches on the 19-20th, at Mexico, being the greatest for this month, and the greatest 24-hour fall for June of record. At Columbia, 1.03 inches fell in 15 minutes on the 19th. The greatest monthly total was 22 inches, at Jackson, Cape Girardeau County.

MISCELLANEOUS PHENOMENA

Fogs, dense.—At a few widely separated points, 15th, 21st, and 30th.

Hail.—Small, with little or no damage, at Eldon on the 9th; Kansas City, Arcadia,
Centerview, 12th. Aurora, 18th; Brunswick, 19th; Clifton Hill, 21st; Kansas City, 22d,
and Springfield, 28th.

Halos, lunar.—On the 23d. Solar.—1st, 2d, 9th, 10th, 12th, 13th, 15th, 16th, 20th, 21st,
22d, 27th, 29th, and 30th.

Thunderstorms.—1st, 4th, 5th, 7th, 9th, 9th, 12th, 13th, 15th, 16th, 17th, 19th, 20th,
22d, 23d, 24th, 27th, 2sth, and 30th.

SPECIAL NOTES.

June 8.—Thunderstorm squalls damaged buildings, trees, and telephone service lines at Trenton, Gentry County; about \$200. At Kirksville, Adair County, \$600. Seligman, Barry County, about \$200. June 12.—Strong thunderstorm squall damaged property about \$200. June 16.—During savere electrical

rooted, and other damage done at La Plata and nearby towns in Macon County; loss about \$1000. The same date a similar storm, at about 11 p. m., caused about \$850 loss at Lebanon, Laclede County.

June 17.—High wind resulted in about \$300 damage to barns, small farm homes, and other property in Knox and Shelby Counties.

June 19.—High wind during a thunderstorm at Center, Ralls County, about 6 p. m., moved a few barns or other small houses from their foundations, and some other damage; loss about \$500. At or in the vicinity of Hannibal, Marion County, during the forenoon, about 11 a. m., a few buildings were damaged by high wind; about \$200.

TORNADOES.

June 18—Parts of Holt, Andrew, Gentry, and Daviess Counties were the scene of two or more tornadoes. The first apparently originated near New Point, Holt County. The path was about six miles long and about 300 feet wide. One person was killed and two injured. Loss to buildings, household effects, etc., about \$50,000. About 6:30 p. m. an other tornado started about midway between Rosendale and Blockow, Andrew County. It traveled east-northeast and left the ground when it entered Gentry County. Width of path varied from 150 feet to 400 feet or more. No persons killed and none injured. Still later, about 8 p. m., a tornado-like wind passed over or near Pattonsburg, Daviess County, coming from the southwest. No persons were killed or injured. Dwellings, barns, school houses, and animals were damaged or destroyed within an area embraced by the towns of Rosendale, Whitesides, King City, Rea, and Pattousburg, the loss being put at about \$150,000.

FLOOD DAMAGE.

The excessive June rains caused heavy loss by washing away lands, and flooding the smaller valleys and lower grounds. Nearly all of the small rivers and creeks were out of banks, and most of them in the central and southeastern sections went out of banks four and five times. Crops of course were destroyed. The damage to highways, and bridges was heavy. In Boone County, alone, the approximate damage to bridges and highways is reported to \$100,000.

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

	pressure el).	rela	ean itive idity.	Suus	hine.		W	ind.		
· _ ^) Y:			rs.	e e	Š	in	Max.	veloci	ty.
Stations,	Mea barometric (sea-le	7 a. m.	7 p. m.	Total hours.	Percentage of possible.	Total move- ment, miles	Average hourly ly velocity.	Miles per hour.	Direction.	Date.
Columbia Hamibal Kansas City St. Joseph St. Louis Springfield Cairo, Ill Keokuk, Jowa	29.82 29.82 29.82 29.81 29.84 29.85 29.86 29.83	84 79 79 81 80 87 87 79	70 64 58 66 72 71 60	234 267 238 236 223 214	53 60 53 53 51 	4,466 5.357 5,930 4,698 7,748 6,544 5,451 4,477	6.2 7.4 8.2 6.5 10.8 9.1 7.6 6.2	19 29 38 36 43 34 28 26	e. w. sw. nw. w. se- s.	30 19 12 17 17 12 8 12

Beginning January 1, 1928 wind velocities are by 3-cup anenometers.

COMPARATIVE DATA FOR JUNE.

	1	'empera	ture.			Precipita	tion.		Nur	nber	of da	ıys.
Year.	Mean.	Departure.	Highest.	Lowest.	Mean.	Departure.	Greatest in 24 hours.	Total snowfall, unmelted.	With .01 inch or more.	Clear.	Partly cloudy.	Cloudy.
1888. 1889. 1890. 1891. 1891. 1892. 1893. 1894. 1895. 1896. 1897. 1898. 1899. 1900. 1901. 1902. 1908. 1909. 1901. 1910. 1910. 1911. 1912. 1913. 1914. 1915. 1916. 1917. 1918. 1919. 1920. 1922. 1923. 1924.	72.67 77.73 74.55 74.55 74.55 73.25 74.33 70.55 70.55 70.55 70.55 70.77 71.23 70.99 70.90	-0.5 -2.4 +4.1 +0.2 +1.4 +0.5 +1.4 +0.5 +2.2 -2.6 +0.2 -4.2 -2.6 +0.3 +0.8 +0.8 +0.8 +0.8 -2.7 +5.8 -3.6 -2.5 -3.2 -2.3 +3.9 +1.9 +1.0 +3.0 +3.0	103 100 105 100 98 105 101 101 102 100 101 103 110 197 98 98 98 99 112 98 100 107 106 98 100 107 106 108 109 109 109 109 109 109 109 109 109 109	37 38 50 42 42 45 44 40 40 40 40 40 40 40 40 40 40 41 41 41 41 41 43 43 43 44 44 44 44 44 44 44 44 44 44	6.20 4.66 2.599 3.18 4.66 5.88 3.87 4.79 2.13 6.57 5.88 6.42 4.79 5.84 4.79 5.84 4.79 5.84 4.79 5.84 4.79 5.84 6.30 5.21 1.78 6.30 5.81 6.30 5.81 6.30 5.81 6.30 6.30 6.30 6.30 6.30 6.30 6.30 6.30	+1.26 -0.28 -2.35 +2.00 -1.76 -0.31 -1.02 +0.83 +1.24 +0.94 -1.07 -0.15 -2.81 +1.63 -1.69 +1.58 +0.01 +0.90 +1.36 +0.27 -1.02 -3.16 -2.22 -2.29 -1.87 +1.17 -0.59 -1.36 +1.11 -2.16 +1.16 -2.25 -2.29	4.25 3.60 3.48 3.85 6.40 6.40 6.40 6.49 6.29 6.68 4.90 5.41 4.90 5.30 4.12 3.55 4.12 3.55 4.12 4.21 4.21 4.21 4.21 4.21 4.23 4.42 4.39		7666613779977100911111118866551210188771164	 15 12 16 12 19 13 15 12 12 15 12 15 16 11 15 16 11 11 16 18 11 11 16 18 11 11 16 18 11 11 16 18 19 19 19 19 19 19 19 19 19 19 19 19 19	99 12 11 11 14 12 100 10 10 13 7 7 10 10 8 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10	6637777556629665667674845974565837

					C	lima	tolog	ical I	Data	for	June	, 1928							,	
	100		ei l	7	F empera	ture, i	n degr	ees Fa	hr.		Preci	pitation	, in in			nber	old	ays.	ion	
Stations.	Countles.	uo	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	With precip .01 inch or more.	Clear.	Partly cloudy	Cloudy.	Prevailing direction of wind.	Observers.
Northeast Plain. Brunswiek Clifton Hill Columbia Downing Fayette. Fulton Gorli Hannibal Jefferson Clty Kirksville Louisiana Macon Mexico. Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Unlouville Warrenton Keokuk, Jowa	Warren	652 731 784 876 661 818 700 534 557 969 469 875 800 748 578 779 650 1,062 816 614	48 28 37 6 47 39 40 35 38 33 28 6 39 53 15 34 45 55	67.7 66.0 66.6 66.8 66.6 67.3 67.0 67.8 66.2 67.1 68.4 68.2 68.2 68.2 68.2 67.8 68.6 68.6 68.6	- 5.5 - 7.0 - 6.2 - 5.5 - 6.8 - 6.8 - 6.8 - 6.6 - 6.7 - 6.3 - 6.3 - 6.7 - 6.3 - 6.7 - 6.3 - 6.7 - 6.3	86 85 85 84 88 85 85 85 85 85 86 88 88 88 88 88 88 88 88 88 88 88 88	18 8† 18 9† 18 8 18 8† 18 18 119 118 118 118 118 118 118 118 1	49 44 47 48 41 48 50 49 46 45 47 45 47 45 48 51 51 45 48 44	66 66 66 66 66 66 66 66 66	30 34 25 27 29 30 31 31 24 25 31 35	9.59 7.58 14.86 12.74 10.14 10.02 6.23 5.08 8.80 6.79 7.53 13.17 7.96 7.25 7.30 6.67 6.67 6.56 9.50 10.70 5.15 8.59	+4.40 +3.24 ‡10.48 +5.60 +5.60 +1.56 +4.78 +2.52 +3.12 +8.39 +3.43 +3.54 +1.96 +4.62 +4.62 +4.74 +1.02 +4.44	2.26 1.77 5.83 7.02 2.20 2.25 2.47 1.54 2.65 3.10 1.75 7.34 2.43 2.00 3.00 1.68 1.35 4.25 4.13 1.54	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	14 14 19 13 15 17 10 14 15 6 14 12 12 11 12 14 15 10 14 11 12 11 12 11 12 13 14 14 12 13 14 14 14 15 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	12 11 5 8 2 2 2 10 11 11 5 4 4 15 14 5 4 8 8 8 6 6 6 6 6 7	3 10 9 16 21 7 12 11 6 2 5 14 13 13 13 14 7 12 7 11	15 9 16 6 7 21 16 9 13 10 13 11 11 13 9 7 15 12 19 12	se. nw. se. sw. sw. w. ne. s. sw. ss. sw. nw. sw. nw. sw. nw. sy.	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Burean James Taylor J. D. Settle Chamber of Commerce J. W. Pulllam U. S. Weather Burean Miss Emnna Swift Prof. J. S. Stokes Stark Bros. Nurseries W. C. Brown Mrs. Abbie Snoddy J. S. Conway L. G. Saeger U. S. Weather Bureau St. Louis University J. C. Jewett Frank Hall Geo. W. Davis Prof. A. W. Ebeling U. S. Weather Bureau U. S. Weather Bureau
Southeast Lowlands, Campbell	Dunklin Penilscot Ripley Cape (firardean Bollinger New Madrid Butler Scott	314 265 344 428 470 289 329 318 358	2 31 23 36 32 26 23 22 52	71.2 72.7 70.0 68.8 69.5 70.6 71.2 70.8 70.6	- 5.1 - 4.8 - 5.3 - 4.4 4.8 - 3.3 - 5.5 - 4.7	87 86 90 88 88 89 88 87 90	18† 19† 19 19 19 19 19 19	47 54 45 44 45 46 51 55 44	7 3† 7 7 7 7 7	34 30 30 35 29 34 25 23	13.11 10.90 12.90 22.00 20.70 17.16 14.93 16.88 15.70 16.03	+6.92 +8.52 ‡17.71 ‡16.53 ‡13.28 ‡13.00 ‡11.87 ‡12.22	2.67 1.94 2.80 3.96 3.40 2.76 4.00 3.30 4.42 4.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	17 17 16 16 14 17 13 17 19 16	5 16 4 2 2 12 11 6 1	13 3 20 7 15 12 9 12 12 11	12 11 6 21 13 6 10 12 17 12	s. s. sw. s. w. sw. s. sw. s. s. s. s. s.	Jeff. King Sam Smith W. W. Martin John G. Putz R. A. DeWitt John A. Spence J. H. Wolpers Glen R. Fisher U. S. Weather Burean
O:ark Plateau. Areadia Aurora Birchtree (hear) Bolivar Dean 1 Eldon Farmington Goodland Greenville Hailey Koshkonong Lebanon Lockwood Mountain Grove(near) Neosho Rolla Salem(near) Seligman Seymonr (near) Springfield Section means and	Iron Lawrence Shannon Polk McDonald Miller St. Francois Iron Wayne Barry Oregon Laclede Dade Wright Newton Phelps Dent Barry Webster	926 1,370 1,000 1,071 1,071 1,071 1,000 934 918 1,350 958 4,265 1,078 1,463 1,011 1,011 1,173 1,542 1,642 1,642	466 377 322 333 288 311 166 383 55 22 266 399 277 233 25 2139	64.9 68.0 67.6 68.4 69.5 67.3° 66.8 66.0 67.3° 65.6 68.7 65.6 67.4 65.6 67.4 65.6 67.4 66.8 67.2	- 7.1 - 5.8 - 5.1 - 4.4 - 3.5 - 5.9 - 5.8 - 6.1 	85 86 87 88 88 88 88 86 85 86 88 88 88 88 88 88 88 88 88 88 88 88	19 18 21 18† 18 20† 19† 21 18† 21 18† 21 18† 21 18† 21 18† 21 18† 21 18† 21 18† 21 18† 21 18† 21 18† 21 18† 21 18† 21 18† 21 21 21 21 21 21 21 21 21 21 21 21 21	43 48 45 54 47 47 41 43 48 45 40 45 46 46 46 46 49 40	7 6 7 14 c 6 7 7 7 7 6 6 6 6 6 6 6 6 6 6 6 6 6 6	27 32 25 35 31 33 36 35 31 35 30 36 30 25 28 29	14.04 18.07 13.56 14.45 13.67 13.67 11.24 19.31 11.76 13.31 11.15 13.31 13.89 8.18 10.91 14.51 16.09 12.27 13.37	+9.46 113.09 +9.03 +9.43 +8.40 +4.48 +9.31 +7.14 +8.97 +9.58 +6.35 +8.75 +8.46 +4.05 +4.61 ‡11.24 ‡11.46 +7.08 +8.49	3.08 2.96 3.15 4.38 2.25 2.70 3.00 1.90 2.80 6.85 4.80 2.04 4.05 1.72 2.55 2.41 3.65 3.54 5.85	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	17 21 14 17 19 15 16 17 18 16 14 18 13 20 21 17 15 15 16 17 18 17 17 19 17 17 19 17 17 19 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	15 3 7 14 16 0 5 4 7 7 3 12 7 6 12 10 8 7 11 8	5 13 10 7 4 20 16 12 8 6 10 ^b 7 8 12 13 11 7 11 ^a 9 12 10	10 14 13 9 10 10 10 9 14 15 17 15 11 15 12 5 9 15 11 14 7 7 12	Se. SW. SW. Se. W. W. W. SW. SW. SW. SW. SW. SW. SW. S	Areadla College W T. Troughton V. H. Kirkendall Southwest Baptist College H. E. Dean E. H. Shepherd Robert Forsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lou Muleare C. S. Crow Mo. Fruit Exp. Sta. U. S. Fisheries Sta. Prof. Elmo G. Harris A. C. Leech Floyd E. Fawver fra H. Halley U. S. Weather Bureau
Southwest Plain. Amoret. Appleton City. Centerview. Clinton. Harrisonville. Lamar. Lamonte. Marshull. Nevada. Warsaw. Section means and	St. Clair. Johnson Henry Cass. Barton Pettis Saline. Vernon	779 862 687	20 33 40 34 50 40 26 38 34 27	68.4 69.0 67.2 67.0 68.5 68.8 69.8 68.6 68.3	- 6.4 - 5.2 - 6.2 - 6.4 - 5.9 - 5.5 - 3.8 - 5.1 - 5.6	89 89 84 90 86 89 91 88 91	21 21 20 21 18 21 21 21 21	48 47 50 47 49 47 49 47 47	4 4 4 4 6 6 6 4 7	31	7.36 5.73 7.06 5.43 11.26 8.16 13.82 6.00 8.44	+2.37 +0.97 +2.33 +0.97 +6.30 +3.67 +8.71 +0.83 +3.60	2.20 1.25 1.56 0.87 3.50 2.60 2.83 0.86 3.50	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	14 14 17 15 18 20 13 16 16	 5 10 7 2 12 16 9 8	22 12 16 2 9 10 11 14 12	3 8 7 26 9 4 10 8 10	ne. se. sw. n. se. sw.	Andrew Rood W. G. Bigelow E. A. Markey A. E. Derwent, N. D. John H. Patterson Jesse A. Mann J. E. Wheeler Dr. W. H. Black George A. Kaupp Everett Martin
	Livingston Nodaway Platte Worth Juckson Caldwell Gentry Lafayette Nodaway Holt Buchanni Atchison	856 1,131 963 1,020 1,095 688 1,169 1,048 967 916 822	18 38 7 23 88 34 2 42 42 77 71 19 24 31	67.0 67.0 66.8a 66.0 68.3 65.2 70.0 66.4 69.1 68.2 66.1 66.9 67.2	- 4.6	84 87 88 87 87 88 84 39 87 90 88 88 87 90	14t 20 21 20 20 20 21 20 21 20 21 20 21 21 21 21 21 21 21	40 43 48 43 46 50 44 50 46 51 52 45 44 43	7 6 6 2 6 3 6 6 6 5 2 2 7 2 t	32 34 40	7.86 9.71 9.35 7.14 6.43 8.52 9.75 9.82 7.66 9.91 10.77 7.14 9.01 8.46	+3.38 +4.64 +4.80 +2.03 +1.88 +0.44 +4.16 +5.05 +5.18 +6.08 +2.33 +4.71 +3.67 +6.50	2.85 3.31 3.45 2.50 2.01 1.10 2.65 3.47 2.38 2.85 3.71 3.65 1.97 3.04 3.71 7.34	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	13 15 13 15 12 17 13 12 19 15 13 16 14 15 14	2" 11 3 15 8 5 11 5 11 12 6 7 9 8	15° 7 14 4 21 14 6 19 8 13 13 10 15 12	12° 12 13 11 11 13 6 11 13 6 10 11	se. W. se. s. se. se. se. se. se. se. se. se.	M. H. Moulton Wm. J. Olenhonse Fr. Adelhelm Hess Fred L. Stiff W. P. Spillman U. S. Wenther Bureau Linn Terry H. L. Yates Miss Carrie Loomis J. R. Brink Mina Wright U. S. Weather Bureau Albert Volker W. H. Estes
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Stations.	Drainage-														D	ауо	f mo	nth.															Total.
Stavious	basins.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	To
Northeast Plain. Boonvilled Brunswick !! Clifton Hill Columbia***	Missouri Grand Charitou Missouri				.20 .08 .10 .05	.23 .25	.02 T.	10	2.32 2.25 1.77 2.16		:::: 'W.'	• • • •		.22 .42 .40			.03	.57 .02	.64 .70 .05 T.	1.22 4.79	1.48 2.26 1.63 1.04	.42 .40 T.	.03	.26 .40	000	.25			$\frac{.93}{3.46}$	1.59	.14		9.77 9.59 7.58 14.86
Downing Fayette Fulton Gorin Hannibal*** Jefferson Cityl !	Mississippi Missouri do Mississippi do Missouri do	.96 .13 .10 .25		.04	.50	.27	.02	.62	1.81				.15 .31 T.	.07 .18 .06 .20				.32 .85 2.47 1.54 .37	.59 .50 .50	1.50	1.65 2.25 .07 .17 2.85 2.65	.11 .23 T95	.20	.18		.02		.02	1.60 2.20 $.31$ $.76$ 1.70	.65			12.74 10.14 10.02 6.23 5.08 11.99 8.80
Kirksville Lonishum Mucou II Mexico II Minull Minull Monroe City Pacifie II	Mississippido Chariton Mississippi Grand Mississippi Meramee	.20		.15	.12 .44 .08	.36 .17 .25		.22 T.	2.43				.04	.39			••••	3.10 .35 .46	.80	1.70	1.75 7.34	.50	i.10	.12	.70 .70 .18	.10			.66	.62 .11 1.00			8.56 6.72
St. Charles St. Louis (1)*** St. Louis (2)* Sheibhra Steffenville Uniou Uniouyille	Missonri Mississippido dodo do Meramee Chariton Mississippi	.09 .16 .20 .29	.30	T. .63 .66	.06	.44 .50 .12	 Т.	T.	1.04 .96 .95 1.68	.02	中. T.		.62 .71	.67 .28 .28 .50 .32 .79			т. Т.	Ť40 .41 .75 .75 .16 3.55	.69 .79 .82 .52 .70	.61 2.45 1.68	2.00 .55 1.14 .85 .45 3.20	.48	.09 T. .02 T.	.32	T. .11 .03 .15 1.12	T. T. .15			.60 .64 .51 .85 1.66	.26	7°.		7.96 7.25 7.30 6.67 6.56 11.73 9.50
Warrenton Keokuk, la.*** Southeast Lowlands Campbell!! Cape Girardeau!! Carnthersville!! Dexter!!	St. Francis Mississippi do St. Francis	.12	.13	1.33 .03 1.15	2.67 2.09	.01			.52	2.00 2.95	.02	.08	.38	1.37 2.04	.68			.80			. 02	1.32	.57	.62 .82 .25	.38	.15		.21	.13 1.47 .25	1.40 2.50 .02	.01		10.70 5.15 13.11 20.04 10.90 14.18
boniphan Jackson Marble Itill Morehouse New Madrid! Poplar Blnf Sikeston!! Calro, Ill.***	Black Mississippi dodo Black Mississippi dodo	.40		$\frac{2.80}{1.60}$	2.51	.10			65	0 10		200	.38	2 06	3			.77 .50 1.05 .67 .80 .93 .43 .39	.80 .20		1.28	.69 1.28 1.57	.24	$2.30 \\ 2.60 \\ 1.18$.52 .60	·····		••••	1.00 2.72 1.70	.20	.50 .08 .40	•••	12.90 22.00 20.70 17.16
Ozark Plateau. Arcadin Aurora Birchtree (near) Bolivar Caplinger Mills. Dean	St. Francis Neosho Black Osage Osage Neosho	1.17 .36 .34		.85 1.28 .57	1.02 .14 .29 .09 .23 .27	.07			.17 .86 1.70 1.19	2.74 3.15 3.05 2.01	 .03		.07	.42 3.14 3.4 .12		.06 T. 1.60	.16	.52 .45 1.27 1.26	.98 2.96 .15 .71 1.11 .65	 т.	1.48 2.38 .78 .03 .46 .64	.95 .46 T.	.19 .75 .42 .50	····	.43	.09		Т.	.81 .94 4.38 3.63	.14	1.40.		13.56
Eldon	Neosho Missouri St. Francis do White Black St. Francis White Black	1.05 .20 .06 1.90	62 T.	.31 1.85 1.85 2.30	1.10 .70 1.03	.10	T.		1.52 .13 1.12 .50	2.35 .70 2.00 2.00 2.81	.25	.75	1.55 2.50	1.90 1.80 1.92			.40	1.00 .40 .60 .60 1.08	.55 1.45 2.00 2.10	1.10	2.78 .80 1.10 1.63 1.70 .35	.75 3.32 .20 .80	.23 1.30 .37 .55 1.10	.14 .35 .65 .50 .90	.19 .28 .14 .20 .28 .70 .10	.15 .05 .16	15 T.	.27	2.35 .38 .15 1.99 3.00 .51	.62 .10 .06	.06 1.20 .35 .29 .44 .59		13.94 12.13 15.05 11.24 19.31 11.76 13.45
Lebanou	Osagedo White Neosho Gasconade	1.58 -73 4.05 .15	.05	T58 .39 .48	.14	.18			.09	1.58		.05	.15	.52		.31	.31	.80	.40	т.	1.80 1.25	.16 1.22	.46	.10	.23	.11		.10	.15 .93 3.50	2.04	5.4		11.15 13.31 13.89 10.86
Seligman Seymonr (near) Springfield *** Steel ville	do	2.41 .87 .94 .22 .06 .27 1.05	.27	1.60 .77	.29 .06 .07 .80 .28 .49 1.21	.09 .12 .09 .82 .13 .21	T. .08 .04 .03 .10	.03	.26 .96 .82 1.82 1.09 .53	.76 2.28 2.66 1.76 .94 .72 2.54	.13	 Υ	.39	1.15 1.67 1.50 .48 4.20		.79 T.	T33	1.00 1.46 .84 .20 .34 .61	T50 .78 .65	T. T.	1.06 .66 .87 .70 1.50 .66 .18	.89 .36 .55	1.83 .37 .42 .50 .02 .20	.14 .43 .17 1.40	.67 .26 .02 .07 .18 .19 .68	.92 .42 .08 .16		.03	3.65 2.95 1.85 .59 .13 .25	 .28 .22 .42 1.20	2.58 58		14.77 16.09 12.27 11.50 8.49 6.10 17.48
Southwest Plain. Amoret. Appleton City Centerview Chinton Concordia Darrisonville;	Missouri Osage Missouri	.12		.24 .22 .20	.18	.36 .07 .20		.10	.23 1.02 1.56 1.60	2.20	Ť.		.18 .28 .20	.15		T. T. .85	T.	1.23 1.25 .55 .11	1.00 .81	T21	.32		. 68 . 23 . 32	T.	.61 .35 .15 1.22	.20		Т.	.30 .79 .30 1.74		.56 .87 .50 .53		7.36 5.73 7.06 8.42 5.43
Joplin* Lamar II. Lamonte Murshul Nevada Osceolaliii. Warsaw Waverly II.	Neoshodododododo	25			50			••••	1 00	2 83			1 03	15	1			98	1 62		72		18		1 01	• • • • •			2 60		67		8. 42 5. 43 12.08 11.26 8.16 13.82 11.38 6.00
Northwest Pialeau. Albany Bethany Chillicothe Conception Edgerton												í						1					.26		.29	.05	.53		.86 .85	1.05	.06		7.23 7.86 9.71
Edgerton Gallatin Grant City Kansas City*** Kidder It King City Lexington Maryville II Oregon St. Joseph*** Tarkio Trenton	dododododo	.40	T. T.	.12 .28 .32 T. .25	.16 .05 .20 .06	.14 .41 .19 .36 .38 .20	.13	.03 T.	2.50 1.22 1.24 1.10 2.65 3.47 2.38		T.		.09 .14 .22 1.40 .02	.65		Ť.	T. T. .03	1.14 .45 2.01 .42 .03 2.29	.01 3.10 T. 2.39 .74	.03 .83 .03 .40 .08	.02 T. .18	.40	.55 .81 .58 .32 .68 .16	.06 .23 .07 .10	.21 .17 .18 .03 .17 .32	T. T.		.11	1.38 .75 1.15 .60 1.05 .56 1.20	.12	.04 .60 T. .67		7.14 8.08 6.43 5.43 8.52 9.75 9.82
Maryville	do do do do do		.04	.11 .57 .11 .67	.32 .21 .39 .36 .13	.32 .24 .08 .36 .27	.02 .25 .10 .08	T 1.35	2.85 3.71 .94 .82 1.71		Ť.		.09 .43 1.31 .34 .12			Τ.	.01 .27 T.	1.62 1.06 3.63 1.97 3.04	.72 .09 .03 .21	.06 T.	.16	.09	.42 .61 .57 .54 .68	.02 .12 .03 .12	.66 .29 .29 .26 .63	7.		1.61	2.20 T. 1.10 .82	.01	.13 .28 .04 .06		7.66 9.91 10.77 7.14 9.01

Except as otherwise indicated observations are generally made late in the afternoon posservation.

11 Precipitation measured in the morning.

12 Precipitation measured in the morning.

Commiss		,	,					Dai	ily	Ten	aper	atu	res	for	Ju	ıne,	19	28														
Finance Section Sect	Stations.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19 2	20 } 2	21 2	2	3 24	25	26	27	28	29	30	31	Mean
Chumbhis Marimum Fig. 16 50 50 72 73 74 75 75 75 75 75 75 75		21	21	66	69	50	70	21	95	79	74	76	21	79	9.4	94	60	90	00	75	60	00		7		1 70	01	70	20	75		77.0
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Exclusions Machine Mac	Minimum	58	51	50		51	47	52	61	56	53	56		58	55	58	62	64	64	67	66	69	3 5	5 5	8 5	4: 5:	53	64	61	59		75.3 57.9
Exclusions Machine Mac	Minimum	57	48	55	47	50	44	47	59	59	50	54	57	79 56		55	60	63	60		63	64 6	2 5	30 7 3 5	6 5	2 51	46	57	78 59	74 55	11	78.1 55.1
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Louislana Macardy	/ Minimum	78 60	78 58	5 58	56 49	57 52	76 50	51	87 60	76 61	71 54	78 57	61	72 60	82 54	60	81 62	83 63	85 63	65	65	86 8 65 6	9 5	81 7	1 5	8 74 4 55	53	80 62	79 65	75 58		77.0 58.7
Macriedy Multiman. 50	Minimum	61	78 49	59	63 51	65 49	73 46	79 52	82 59	74 57	72 52	76 51	80 52	70 55	84 54	82 57	79 59	79 63		81 69	81 66	84 8	1 7	8 7	2 6	8 76	77 54	73 63	60	73 56		76.5 56.9
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Carutherwille. Maximum 78	(Minimum	56	78	70 56	51	56 50	76 45	50	58	74 57	76 52	75 51	50	71 58	54	59	60	80 60	85 59	77 64	79' 65'	82 8 64 6	0 7	9 7	0 6 8 5	7 76	79 53	77 61	78 62	78 57		76.5 56.0
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Carutherit Joseph S. 19	Unionville Maximum	78 57	80 45	70	70 54	62 48	75 45	78 53	80 58	72 54	75 47	75 50	80	70 55	84	83	80 58	76 50	82 57	84	84 65	84 8 58 6	0 7	8 7	2 6	7 78	78 52	78 60	80 58	80		77.1 54.3
Carutherit Joseph S. 19	Warrenton Maximum	78 62	77	74	58	58	70	80	85	74 62	71	81	82 65	79	82 56	83	83	85 64	86	84	83	85 7 67	9 7	9 7	5 6	9 78	80 54	75 63	74 65			77.3 58.4
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Designation Maximum 76 76 76 76 76 76 76 7	Minimum	63	60) 56	57	61	51			63	57	61	64	62	57	61	61	65	69	72	67	65 6	5 6	2 6	5	7 52	55	66	67	60		61.0 80.6
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Arechia M. Arimum. St. 78, 50 60 70 70 81 70 60 70 80 70 70 70 70 80 80 70 70 70 70 80 80 70 70 70 70 70 70 80 80 70 70 70 70 70 70 70 70 70 70 70 70 70	(Minimum	55	59	55	58	55	46	45	65	64	58	58	54	49	55	60	62	64	66	66	63	65	4 6	2 6	5	3 53	55	65	70	60	• • •	58.8 79.2
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Maryville	Kidder W Maximum	82	2 79	9 67	62	65	52 71	82	80	71	58 73	60 74	63 78	58 73	59 81	80	80	60 72	61 83	68 83	67 84	67 81	76	50 5 77 7	9 7	1 59	60 76	63 78	61 75	74		59.8 75.8
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^{*,} b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record. Maintenance read in the morning: the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

WEO, St. Louis, 7-20-28-925.

CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION. GEORGE REEDER, Meteorologist.

Vol. XXXII. Columbia, Mo., July, 1928. No. 7.

GENERAL SUMMARY.

July, 1928 was normal in warmth and sunshine and quite dry. Up to the 29th, when rather general rains added materially to the monthly total, many sections had received a little more than one-half their July quota of rain. The first ten days of the month were the hottest of the summer. This was in marked contrast to June, the second coolest on record. After about the 10th temperatures varied a little above or below normal, with a second hot spell from the 18th to the 22d and a

cool period on the 28-29th.

While the temperatures were unpleasant physically during much of the month, especially at night, the weather features were almost ideal from the farmer's standpoint. During the month crop prospects made remarkable improvement. With a cool and dry spring, followed by a very cool and wet June, the month opened with wheat and oat prospects poor, corn backward and much replanting necessary, fields foul with weeds, and farm work generally behind. At the close of July, wheat and oat yields and quality were exceeding all previous estimates, corn prospects were the best in perhaps 20 years and all other crops in excellent condition. The hot and open weather of July, following the wet, cool June, and followed in turn by the fine rains of early August made a sequence of weather unusually favorable for agricultural interests.

TEMPERATURE.

The monthly mean temperature for the State, 66 stations reporting, was 77.2°, the normal value. The first ten days averaged about 6° above normal, being the hottest period of the summer. Clinton, Henry County, recorded the extreme highest, 102°, on the 21st; 7 stations recorded maxima of 98° or higher, and 53 stations had 94° or higher. The lowest was 48° at Louisiana, Pike County, on the 28th. Temperatures of 90° or higher occurred on an average of 14 days, varying from 11 days in the north to 19 days along the southern border.

PRECIPITATION.

The average precipitation for the State, 98 stations reporting, was 2.97 inches, or 1.08 inches less than the 56-year average. The month was really drier than the totals indicate, many stations having less than 60 per cent the normal rainfall up to the rains of the 30-31st. With the soil saturated at the opening of the month, however, the rainfall generally served current soil moisture needs. The rain of the last two days and the first few days of August were most timely though, and came just when the main corn crop was filling the ears, a critical time with corn when much moisture is required. The rainfall of the month was of the local shower type with wide variations in amounts. Though generally light some generous amounts occurred and the showers were fairly well distributed through the month. The greatest monthly amount was 7.02 inches at Grant City, Worth County, and the least was 0.34 inch at Morehouse, New Madrid County. Monroe City recorded 3.30 inches on the 22d, the greatest amount in any 24 hours. There were a few reports of damage from hail and thunder squall winds but the losses were generally small; these are listed under remarks from

MISCELLANEOUS PHENOMENA.

Aurora.—Brilliaut on 7th, visible all over the State. Hail.—On 10-11th at Steffenville, Centerview, Clinton, Bethany, Lexington, and Lamonte. Hailstones generally small and damage slight. Considerable damage vicinity

of Lamonte, but most of this due to associated squall wind.
11alos, solar.—11th, 12th, 14th, 20th, 21st, and 25th.
11alos, lunar.—24th, 28th, and 31st.
11alos, lunar.—24th, 28th, and 31st.
11alos, lunar.—26eneral on 8th, 10th, 11th, 12th, 19th, 21st, and 31st. Local on 4th, 5th, 7th, 9th, 18th, 26th, 27th, and 30th.

OBSERVERS REMARKS-WINDS, HAIL, ETC.

OBSERVERS REMARKS-WINDS, HAIL, ETC.

Brunswick.—On the 10th, 6:30 to 7 p. m. a strong wind damaged houses and other buildings, trees, and crops.

Clifton Hill.—A 7—inch rain reported a few miles south on 21st.

Downing.—Small damage to buildings and trees from whid on 9th.

Steffenville.—Hail and high wind on 10th did some damage.

Farmington.—Gardens, late potatoes, and late corn suffered from drouth but fine rain of 31st helped greatly.

Lebanon.—Crops needing rain but good rains have fallen near here.

Lockwood.—High wind on 11th, damage small.

Appleton City.—Wind midnight 10—11th damaged trees, and power lines.

Centerview.—Hail on 11th did slight damage.

Clinton.—Hail and wind on 11th, very little damage done.

Lamonte.—Much damage by wind and hail on 11th to crops and buildings.

Nevada.—Severe electric storm from northeast on 11th uprooted trees and wrecked one of our greenhouses.

Warsaw.—Very fine rain 31st worth thousands of dollars to corn crop.

Lexington.—Moderate hail on 11th, damage mostly to crops.

O. R. R.

O. R. R.

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

	n pressure vel)	Mer relat humi	tive	Suns	hine		,	Wind		
	an pre evel					1 10	y y	Ma	x. velo	eity
Stations	Mean barometric pr (Sea-leve	7 a. m.	7 p. m.	Total hours	Percentage of possible	Total move- ment miles	Average hour- ly velocity	Miles per hour	Direction	Date
Columbia	29.97 29.97 29.95 29.94 29.98 30.01 30.00 29.98	84 82 78 84 74 81 82 79	66 56 60 59 60 62 58	335 360 310 312 362 345	74 80 68 69 81	3,789 4,524 5,453 4,321 6,305 5,617 3,903 3,800	5.1 6.1 7.3 5.8 8.5 7.5 5.2 5.1	23 35 31 34 34 30 27 27	s. se. ne. se. e. sw. nw. sw.	11 10 10 10 5 11 31 19

Beginning January 1, 1928 wind velocities are by 3-cup anemometers.

COMPARATIVE DATA FOR JULY.

		Tempera	ature			Precipits	tion		Nun	nber	of d	ays
Year .	Меар	Departure	Highest	Lowest	Mean	Departure	Greatest in 24 hours	Total snowfall, unmelted	With 01 inch or more	Clear	Partly cloudy	Cloudy
1888 1889 1890 1890 1891 1892 1893 1894 1895 1896 1887 1898 1890 1900 1902 1903 1904 1905 1906 1907 1909 1910 1911 1912 1914 1915 1916 1917 1918 1919 1920 1921 1918 1919 1922 1923 1924 1925 1926 1927	79.3 77.1 79.6 77.2 75.8 77.3 78.7 76.1 76.1 77.4 77.4 77.4 77.4 74.7 78.8 80.0 76.9 80.0 76.9 80.0 76.9 80.0 76.9 77.9 78.9 78.9 78.9 78.9 78.9 78.9 78	+2.3 +0.1 +2.6 -4.3 -1.2 +0.3 -0.5 -2.6 +0.2 +1.7 -0.9 -1.0 -6.1 +8.4 -2.8 -3.6 -2.3 -0.5 -2.4 +1.4 -0.3 -0.5 -1.0 -0.1 +1.4 -0.3 -1.2 +1.7 -0.9 +1.4 -0.3 -1.0 -1.0 -1.0 -1.0 -1.0 -1.0 -1.0 -1.0	111 107 106 103 101 101 101 109 106 108 102 102 102 103 104 105 101 105 101 105 109 109 107 109 109 109 109 109 109 109 109 109 109	50 46 52 40 45 51 45 45 45 48 48 48 48 46 46 46 47 48 47 49 41 41 42 42 42 42 42 42 43 46 46 47 48 48 48 48 48 48 48 48 48 48	3,31 3,75 2,98 4,99 4,91 3,22 5,58 7 3,22 4,59 3,22 4,59 3,22 4,59 3,22 4,59 4,65 7,45 2,74 3,25 2,74 3,25 2,74 3,25 2,74 3,25 2,74 2,87 2,87 2,87 2,87 2,87 2,87 2,87 2,87	-0.98 -0.54 -1.31 -0.74 +0.70 +0.62 -1.81 +2.50 +1.58 -1.07 +1.29 -0.18 -2.27 +0.30 -1.07 +0.36 +3.16 +0.28 -2.02 +2.41 -1.55 -1.16 -1.66 +1.59 -3.15 -1.22 -2.49 -1.37 -0.81 -1.77 +1.82 -2.49 -1.37 -0.81 -1.77 +1.82 -1.84 -1.34 -1.99 +1.34 -1.91 +0.08 -1.08	4.75 6.44 4.90 6.52 8.00 4.05 8.16 7.03 3.26 6.70 2.65 3.41 5.30 3.26 6.70 2.65 3.45 4.55 3.47 4.55 3.40 4.55 3.47 4.55 3.47 4.55 4.55 4.55 4.55 4.55 4.55 4.55 4	000000000000000000000000000000000000000	78558888551099855881809985577777238866577586610777887	12 14 18 10 15 19 17 17 15 12 17 16 16 18 18 18 17 14 25 20 19 23 18 20 17 18 15 16 17 18 15 16 17 18 17 18 17		9533953554234459444666644581342535555544

Climatological Data for July, 1928

			(1		C	lima	tolog	ical I	ata	for	July	1928								
					Tempera	ature, l	n deg	rees Fa	hr.	5	Precl	pltation	, ln ln	ches.	Nun	aber	of d	ays.	ion	
Stations.	Countles.	Elevation, feet.	Length of record, years.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	With precip.,	Clear.	Partly cloudy.	Cloudy.	Prevailing direction of wind.	Observers.
Northeast Plain. Brunswick Clifton Hill Columbia Downing Fayette Fulton Gorin Hannibal Jefferson City Kirksyille Louisiana Macon Mexico. Monroe City St. Louis (1) St. Louis (2) Shelbina Steffenville Unionville Warrenton Keokuk, lowa. Section means and	Chariton Randolph Boone Schuyler Howard Callaway Seotland Marion Cole Adair Pike Macon Audrain Monroe St. Churles St. Louis City do Shelby Lewis Putnam Warren Lee, la. extremes	652 731 784 876 661 818 700 534 557 969 469 875 800 748 456 568 578 778 650 1.062 816 614	48 28 37 6 47 39 35 39 38 6 39 38 6 39 53 15 34 29 40 40 40 40 40 40 40 40 40 40 40 40 40	78.2 75.9 77.2 75.6 77.8 77.8 77.9 75.9 74.2 77.6 77.9 77.9 77.9 77.1 78.2 79.9 79.3 77.1 75.3 77.4 77.3	+ 2.5 - 0.5 + 0.3 	97 92 94 96 96 95 95 98 97 95 94 95 94 95	5† 57 50 20 5 20 19 18† 5† 3 21 19 .: 5† 3 2† .: 3† 18 3† 6 21	57 54 58 54 55 57 59 58 56 48 55 56 63 63 63 54 52 57 57	28 28 30 28 14† 30 30† 30 29 28 28 29 29 29 29 28 28† 29 28 29 29 28	30 28 26 34 30 26 28 27 38 31 31 31 26 25 31 26 28 38 31	2.59 2.33 3.72 6.08 4.77 2.07 4.25 2.76 3.10 3.09 1.72 1.61 5.57 5.10 6.66 4.77 5.10 6.66 4.77 5.16 6.93 3.25 5.05 5.05 5.05 5.05 5.05 5.05 5.05 5	-2.05 -1.55 +0.07 +1.15 +1.12 -0.99 -0.35 -1.36 -1.22 -2.04 -2.14 +1.87 +3.68 +2.02 -1.76 -1.76 -1.76 -0.48 -0.38	1.10 0.61 1.98 2.57 1.55 0.53 1.08 0.94 0.87 2.60 0.70 0.65 1.330 2.91 1.80 1.48 1.25 2.15 1.144 3.30	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7 6 7 9 9 5 9 9 8 8 4 4 4 4 5 5 9 8 6 6 4 7 7 7	17 222 15 20 9 10 13 13 24 22 14 18 25 15 12 16 18 19 11 13 13 13 13 13 13 13 13 13 15 15 15 15 15 15 15 15 15 15 15 15 15	5 6 8 10 19 13 100 3 6 6 17 8 0 9 11 15 12 14 8 11 7 9	9 3 8 8 1 3 8 8 4 4 3 0 5 6 6 2 5 5 4 4 3 3 5 1 11 5	SW. S. S. SW. SW. SW. Ne. SW. SSW. SW. SSW. SSW. SSW. SSW. SSW.	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Bureau James Taylor J. D. Settle Chamber of Commerce J. W. Pulliam U. S. Weather Bureau Miss Emma Swift Prof. J. S. Stokes Stark Bros. Nurseries W. C. Brown Mrs. Abble Snoddy J. S. Conway L. C. Sæger U. S. Weather Bureau St. Louls University J. C. Jewett Frank Hall Geo. W. Dwyls Prof. A. W. Ebeling U. S. Weather Bureau
Southeast Lowlands. Campbell Caruthersville Doniphan Jackson Marble Hill Morehouse Poplar Bluff Sikeston Cairo, Ill. Section means and	Dunklin Pemiscot Ripley Cape Girardcau Bollinger New Madrid Butler Scott Alexander, Ill extremes	314 265 344 428 470 289 339 318 358	2 31 23 36 32 26 23 22 52	78.7 79.0 78.9 77.8 78.4 79.0 79.5 80.2 79.0	- 1.6 - 0.7 + 0.4 + 1.1 - 0.3 + 1.4 + 0.6 + 0.2	96 98 97 94 97 ••• 96 95 94 98	20 6 5 4† 20 5 21 4 6	57 63 56 53 53 56 56 56 52 53	29 30 29 29 29 29 29 29 29 29	31 21 30 30 31 27 29 21 31	1.42 1.36 3.09 1.06 3.15 0.34 1.97 2.16 1.43 1.78	-2.05 -1.64 -2.46 -1.53 -4.43 -1.58 -2.61 -1.64 -2.24	0.76 0.76 2.10 0.60 1.95 0.20 0.67 1.90 0.93 2.10	0 0 0 0 0 0 0 0 0 0	5 4 5 3 2 8 4 6 4	14 25 8 10 19 27 20 17 8 16	15 5 21 11 12 4 10 11 17 12	2 1 2 10 0 0 1 3 6 3	s. sw. s. w. sw. sw. sw.	Jeff, King Sam Smith W. W. Martin John G. Putz R. A. DeWitt John A. Spence J. H. Wolpers Glen R. Fisher U. S. Weather Burean
Ozark Platean. Arcadia Arcadia Aurora Birchtres (near) Bolivar. Dean ‡‡ Eldon Farmington Goodland Greenville. Hailey Koshkonong Lebanon Lockwood Mountain Grove(near) Neosho Rolla Salem(near) Seligman Seymonr (near) Springfield Springfield Section menns and	Oregon Laclede Dade Wright Newton Phelps Dent Barry Webster	1,011 1,099 1,173 1,542 1,642 1,324	466 377 322 333 288 311 166 335 5 2 2 266 399 277 233 255 211 39	74.6 76.6 76.8 77.1 76.5 75.0 75.8 75.9 77.4 76.8 75.9 77.4 76.8 75.0 76.6 76.6	- 1.3 - 1.2 + 0.4 	91 92 92 96 96 93 94 94 98 94 99 91 96 93 91 92 98	4† 3† 3† 20 19† 5† 5† 5† 5; 21 20† 19 3† 21 19 20† 191 20†	52 60 58 57 52 50 52 58 57 55 58 57 55 58 57 55 59 59	29 29 29 29 29 29 29 29 14 29 29 29 29 29 29 29 29 29 29	26 24 30 33 30 36 29 32 27 36 35 30 27 30 26 29 22 23 36	3.82 2.81 1.56 3.53 4.08 2.49 2.01 2.59 3.29 5.29 5.29 1.08 3.38 0.90 6.60 1.75 2.15 2.66 0.37 3.01 2.81	-0.42 -2.55 -2.43 	1.20- 0.90 1.40 1.05 1.39 1.48 1.05 1.12 2.29 0.71 1.28 0.52 1.87 0.68 1.13 0.87 0.15 2.29		7 5 2 10 6 5 5 4 7 7 5 4 4 5 6 6 11 6 6 9 3 5 6	30 21 26 8* 15 22 25 18 14 24 20 21 22 19 17 17 14 18 22 20	1 7 4 19*13 7 4 11 12 5 7 9 7 9 13 15 10 9 9	0 3 1 3 3 2 2 2 2 5 2 4 1 1 2 3 1 2 3 0 0 2 0 2 0 0 2 0 0 2 0 0 2 0 0 0 0	W. SW. SW. S. S. W. W. SW. SW. SW. SW. S	Arcadla College W. T. Troughton V. H. Kirkendall Southwest Baptist College H. E. Denn E. H. Shepherd Robert Forsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lou Mulcare C. S. Crow Mo. Fruit Exp. Sta. U. S. Fisheries Stu. Prof. Ehmo G. Hurris A. C. Leech Floyd E. Fawver In H. Hailey U. S. Weather Bureau
Southwest Plain, Appleton City. Centerview Clinton Harrisonville Lamar Lamonte Marshal Nevada, Warsaw Section means and	St. Clair. Johnson Henry Cass Barton. Pettis Saline Vernon Benton extremes	853 872 765 904 980 867 779 862 687	33 40 34 50 40 26 38 34 27	77.6 79.0 79.5 76.4 78.0 78.4 77.6 78.4 78.1	- 0.7 + 0.2 + 2.0 - 1.4 - 0.5 - 1.1 - 2.6 + 0.1 - 0.5	93 96 102 95 94 97 94 96 102	5† 5† 21 5 21† 5 21† 21 21 21	59 53 60 55 60 56 56 59 58 53	28† 28 14† 28 29 28 28† 14 28	26 32 27 29 26 30 29 28 32	3.24 2.99 3.11 5.03 4.05 6.25 2.76 2.83 3.78	-1.39 -0.96 -0.83 +1.25 -0.19 +2.25 -1.17 -1.47 -0.31	1.40 1.12 1.22 1.48 2.10 2.54 1.75 2.08 2.54	0 0 0 0 0 0 0 0 0	765899 : 336	10 12 14 8 18 26 15 16 15	20 14 15 4 9 3 10 14 11	1 5 2 19 4 2 6 1 5	sw. s. sw. sw. sw. s.	W. G. Bigelow E. A. Markey A. E. Derwent, M. D. John H. Patterson Jesse A. Mann J. E. Wheeler Dr. W. H. Black George A. Kaupp Everett Martin
	Lafayette Nodaway Holt Buchanan Atchison	856 1,134 963 1,020 1,095 688 1,169 1,048 967 916 822	18 38 7 23 38 34 2 42 37 71 19 24	77.0 76.8 77.0 75.8° 76.0 78.4 74.2 79.6 75.4 78.5 77.6 75.8 77.6 76.8	+ 1.0 - 3.4 + 0.6 - 0.2 + 0.3 - 2.7 - 0.2 + 2.5 - 0.2 + 2.9 - 1.1 - 1.2 + 0.8 - 0.1	94 97 98 96 94 95 95 95 98 98 96 95 95 98	6† 5† 6 6 10† 5 3 5 6† 5 4† 6† 5†	50 53 56 52 56 61 52 53 55 56 58 55 56 50 48	13 28 28 28 28 28 28 28 28 28 28 28 28 28	29 30 29 29 29 29 33 29 28 33 29 27 27 27 33	2.87 2.98 4.25 2.37 7.02 2.64 3.64 2.61 3.20 6.32 4.62 3.19 3.76 2.97	-1.64 -1.60 -0.05 -2.43 +1.86 -1.49 -0.29 -1.52 +0.93 +0.30 +0.10 +1.29 -2.43 -0.54	1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8 9 8 7 9 11 10 11 14 10 12 9 11 10 7	11 17 9 23 9 15 19 16 18 15 16 10 222 15	15 11 16 2 21 11 5 15 9 18 9 12	5 3 6 6 1 5 7 4 8 1 6 3 0 4 4	se. sw. s. sw. s. se. s. sw. s. sw. s. sw. se. sw. se. sw. se. sw. se.	M. H. Moulton Wm. J. Olenhouse Fr. Adelhelm Hess Fred L. Stiff W. P. Spillman U. S. Weather Bureau Linn Terry H. L. Yates Miss Carrie Loomis J. R. Brink Mina Wright U. S. Weather Bureau Albert Volker W. H. Estes

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

Reference letters, *, b, *, appearing in the table indicate number of days missing; for example, b, represents two days, etc.

7Also on other dates. 11 Received too late to be included in means and summaries. 11 Post-office address of Dean is Anderson.

								1	Dai	ly F	rec	ipit	atio	on f	or J	July	, 18	28															
Q1 11	7 0 • • •														1	Day	of m	onth															fal.
Stations.	Drainage- basins.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Northeast Plain.	Missouri	.44										4.1		05						16			90			1					.23	.48	2.09
Brunswick II	Grand Chariton	.25									.61	11 10	Е.									.73 .46					.08	.20			.42	.15	$\frac{2.59}{2.33}$
Columbia***	Mississippi Mississippi				2.57				T80		.37	.03 1 .25	T. T.	19					.08			1.42					.03					1.98 .32 1.55	3.72 6.08 4.77
Fulton	do Mississippi	.19			1.08				1	.12		.1 .40								.60		.03	.09	••••	• • • •	••••	.22	.03	••••	1		.53	$\frac{2.07}{4.25}$
Hannibal***	do Missouri do	.06			Т.					.43		. 10		07							.22	.94	.30			::::		.18			40	.78 .50 .41	2.76 1.49 3.10
Kirksville Louisiana	Mississippi										2.60		.20	2				• • • •	• • • •			.14				• • • •		• • • •				.10	3.09 1.90
Mucon	Chariton Mississippi Grand								••••	T.	• • • •	. 65		51				••••	• • • •	• • • •	••••	••••	.07	• • • •	••••	• • • •		.50				.28	1.72 1.61 2.75
Monroe City Paeific	Mississippi Meramee					.05			.74	.05	T.	T.	.09	. 02						.03	.58		3.30					_	- 1			-98	5.57
St. Charles St. Louis (1)*** St. Louis (2)*	Mississippi do					2.91			.19	7	T.		2.28 1.36	3 6 .01						Т. Т. Т		т.	Ť.	••••			T. T.		,	T. T.	Ť.	1.72 1.00 1.45	5.10 6.66 4.77
Shelblua	do	.02							.25	.11	1.25	1.48	.05	04						.02			.18 .20				Ť	.42 .10	.01			1.05	$\frac{2.40}{3.25}$
Union Unlouville Warrenton	Meramee Chariton Mississippi	.04			Ť.	••••			.65		Ť.	.60 T.	20 T.							i.30	Ť.	2.15						Ť.		•		.15 .15 1.21	0.65 5.05 1.66
Warrenton	do				.32				.22		.49		.23	3					T.	.20		.03 T.		••••		••••	.03		••••	••••		1.44	2.93
Southeast Lowlands Campbell	St. Francis Mississippi	.31							Т.					76					.10	.07 T.	.18								.22				1.42 1.79
Caruthersville Dexter Doublehan	St. Francis		.05				.05							86	· · · ·					.76	.15								.24	••••		.02	1.36 2.01 3.09
Jackson	Bluck Mississippl Mississippi									1.10				:::::						.45												1.95	1.06 3.15
Morehouse New Madrid!! Poplar Bluft	do do Black	1.5	5)	1		1).									1		1,25	.02			.27					T.	••••			0.34 1.73 1.97
Sikestonil	Misslssippido	.06	3				T.		T.	.02		T.	1.90	0					.05	.15							Ť.	Ť.	.07	••••		.54	2.16 1.43
Ozark Plateau.	St. Francis					1														Q1	1 20			97				.13				T.	3.82
Aurora	Neosho									: .ie		.41	T.	.					i.40				.90	• • • • •		Ť.					.73	.22	2.81 1.56
Bolivar Caplinger Mills Denn	Osage Osage Neosho	.41							Ť.	6		. 1 . 60	0.05	21				1				1	26					.02		0.4	1 05	.01	2.48 3.53
Eldon . Farmington . Fredericktown	Missouri St. Francis	.87	7			Ť.			78	3		46	T.						.i2	.08			T.				1.39 T `.	Т.			.16	$\frac{.91}{1.48}$	$\frac{4.08}{2.49}$
Galena	White	.75	5		l		X		i					:[::::						1.05	.62		.89				1.62		••••	••••	• • • •	ii.	$ \begin{array}{c} 1.30 \\ 3.26 \\ 2.01 \end{array} $
Greenville	Biack St. Francis White								.30	65		20	. 30	0					.52		1.12		.27			i.30					.10	72	$\frac{2.59}{3.29}$
Koshkonong Lebanou Lockwood	White	.71	i							T.		08							.00				1.10				.16 T.			••••	.52	.16	5.29 1.08 3.38
Mountain Grove	Osagedo do do 	.52	2						Ť.			i.3	.04	4 .05	5					.02	.04	.30	.03 .78			.04	.05 .27	i.55	•••	т.	i.87	.28	0.90 6.60 0.87
Rolla [] Salem (near)	Meramec . A.,						• • • •		.26		T.								T.	.26	1 19	.05	69			• • • • •		• • • •		.68	.17	.33	1.75 2.15
Seligman Seymour (near) Springfield ***	Neosho Whitedo Meramee							∵ii	.10			T.	.20	0		.08 T.	j	Ť.					.87			.14	.35 T.				.40 	.37	$\frac{2.66}{0.37}$ $\frac{3.01}{3.01}$
Steelville	Meranice	.18					••••			.45		08	T.								.10	1,20	1.24				.02				21		2.00
Tuscumbia	White	.32	2							.53		35		.16									.31	.15			.17	i		••••	.25	.10	$\frac{1.76}{1.20}$
Southwest Plain. Appleton City	Osage								T.			1.40				.50						.43	.01			T.		.79		.01	.10 .27		3.24
Centerview	Osage Missouri Osage Missouri								.17	7		1.12 1.15 2.46	T.		Т.		i.ii				.90	1.22	3.03					.13		т.	.27 .40	.45 .23 .15	$\begin{array}{c} 2.99 \\ 3.11 \\ 6.32 \end{array}$
Harrisonville	Missouri Osage. Neoslio do	.84							.01	5		1.49	.40	j		T.						.20	1.48			.09		.11		.51	.06 .75	1.41	5.03 4.54
Lamonte																																.70 1.40	4.05 6.25
Nevada Osceola	Osagedo																															.20 .05	2.76
Warsaw Waveriy II			3						1		ł	1	1									- 4						1		- 1	.03	.05	
Northwest Platean. Albany Bethany	Grand	· 4.							20		.65	.20	03	3		.44			.10		1.26	3.60						10	.27		T.	·T.	6.55 2.87
Chillicothe	do. Missouri	.21							.08 T.			1.03	.11	.47		.75			т.	.01	Ť.	$\frac{.60}{.61}$.21					.05		T.		.31 .05 .09	2.98 4.25
Edgerton Gallatin	Grand	.12							T. T.		····	1.49	.29	T.		.20	T.			T.	2 27	.64	T. T.					.21		.04	.05	.09	2.37
Grant City. Kansas City*** Kidder ##	Missouri	.35			T.			Ť.	.07	2	1.23	1.52	.02	.16		Ť.	.20		.02	Ť .11		.02 1.13					.06	.02		.03 T.	i ³²	.06 .74 .02	2.64 3.64
King City Lexington Maryville	Missouridododo	.42			.08				.87	,03		.09 1.75	.35	02		.76				.11	.10	2.68	.61					.16 .36 .45		.03	.06	.02	$\frac{2.61}{3.20}$
Lexington Maryville [] Oregon St. Joseph***	do				.02			.36	.84		.48	T.	1.45	7		32			т.	.06	.51	.41					.23	.73	Ť.	.03	Τ΄. Τ.	.1.	4.62 3.19
Tarkio Trenton																																	5.00
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							Da	ily	Ter	npe	rati	ures	fo	r Jı	ıly,	19	28													-		
Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Меви
Northeast Plain Brunswick \$\sqrt{\color{1}}\sqrt{\color{1}}\ Maximum \\ Maximum \\ Minimum \\ Mini	922 633 90 63 91 577 877 663 90 63 87 660 90 54 90 59 92 61	93 63 92 75 92 64 92 74 91 73 92 76 90 66 93 72 94	94 73 93 75 94 73 93 77 92 74 96 68 95 74 95	93 76 91 76 93 74 92 72 92 92 92 93 70 92 68 83 75 93 75 93 75 93 75 93 75 93 75 93 75 93 75 93 75 93 75 93 75 93 75 93 93 94 94 95 95 95 95 95 95 95 95 95 95 95 95 95	97 74 94 95 96 72 90 73 93 69 94 75 93 69 95 71 96 72 96 895 71 96	96 75 92 75 94 71 94 77 94 77 93 75 96 66 75 91 74 96 75 91 92 91 91 91 91 91 91 91 91 91 91 91 91 91	95 75 92 74 71 93 76 93 73 93 72 94 64 95 73 95 73	85 75 86 70 87 72 87 72 84 73 83 72 94 64 86 75 87	93 68 89 66 93 62 90 68 90 66 90 60 90 65 87	97 70 93 65 94 68 93 69 91 69 80 62 90 60 94 67 94 68	83 67 83 65 86 62 85 69 87 65 83 61 88 60 85 62 85 65 65 86 65 86 65 86 65 86 65 87 65 86 65 86 65 86 66 87 66 87 66 87 66 87 87 87 87 87 87 87 87 87 87 87 87 87	87 67 85 69 88 86 84 80 68 87 69 81 69 83 68 85 67 87 70	83 63 81 64 85 62 80 63 83 65 79 60 82 52 81 64 83 63	83 59 80 58 83 55 81 59 80 61 82 57 84 50 83 57 82 83 83 83 83 83 83 84 85 86 87 87 88 87 88 87 88 87 88 87 88 87 88 87 88 87 88 87 87	80 63 81 66 81 61 87 61 81 66 83 60 86 48 82 60 84 62	89 67 86 67 88 64 87 66 88 69 87 66 88 52 90	92 67 90 68 91 64 90 66 67 89 65 90 54 91 65	96 71 92 74 65 92 73 96 71 92 72 92 60 94 71 95 68	944 754 94 73 95 95 74 96 73 88 70 94 66 96 73 97 73 95	93 76 90 76 92 74 92 76 95 77 89 70 92 64 92 74 94 76 95 74 94 76 95 74	91 72 91 72 93 70 91 72 96 75 85 70 92 68 98 74	90 72 87 72 91 69 89 72 88 71 88 69 90 65 91 70 89	88 66 85 67 89 62 86 66 88 69 85 63 92 56 86 64 87 64	90 63 86 64 90 60 88 67 88 63 85 62 92 63 90 63 63 85 63 85 64 90 90 90 90 90 90 90 90 90 90 90 90 90	91 67 87 67 67 68 88 63 87 69 89 67 90 56 91 66 88 88 88 88 88 88 88 88 88 88 88 88	89 70 84 68 92 66 87 71 85 68 90 68 90 68 90 68 90 68	84 66 84 65 89 61 85 64 86 88 62 90 54 85 63 87 63	80 57 75 59 77 55 74 60 77 63 88 50 76 66 77 55 77 77	72 61 71 62 71 58 76 60 72 60 79 80 48 78 59	72 64 71 58 75 75 78 59 74 58 54 73 58 74 73 58 74 75 75 76 76 77 76 77 76 77 76 77 77 77 77 77	83 62 89 66 81 57 77 66 80 58 82 64 80 58 82 64 83	65.5 68 0 86.3 65.2 88.7 64.6 87.6 65.5 87.8 65.0 66.1 85.7 85.1 89.4 88.6 66.6 88.7
St. Louis(1)	89 66 88 60 90 64 90	73 92 71 94 73	75 92 74 96 74	66 92 74	91 60 95 72	91 74 93 72 94 75	94 77 92 70 95 74 94 70	91 73 86 68 88 73 89 70	92 73 90 63 92 69	93 76 88 65 92 69 94 66	89 74 85 60 88 66	87 70 80 64 89 67	83 68 80 58 82 63	81 66 83 54 81 60 84 62	84 70 84 58 87 64	61 89 65 87 71 88 66 88 67	90 72 90 65 92 66 91 63	92 75 94 70 96 71 92 69	95 74 92 64 96 72 94 67	68 95 73 96	74 95 77 86 68 94 74	90 74 87 66 89 71	87 72 86 60 87 66	86 71 88 58 86 65 90 62	87 73 88 65 90 69	84 73 90 65 85 70 84 65	88 71 88 63 88 67 91	79 66 75 52 83 59 85 66	74 63 80 56 73 57	64 78 52 74 61	59 85 65 86 63 84 63 92 61	88.4 71.4 87 2 63 4 88 9 68.0
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^{*,} b, *, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

Will Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

WEO, St. Louis, 8-17-28-925.

Vol. XXXII.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU. CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION. GEORGE REEDER, Meteorologist.

No. 8.

GENERAL SUMMARY.

Columbia, Mo., August, 1928.

The month of August, 1928, in Missouri, was not marked by any outstanding weather features. The temperature and sunshine elements approximated the normal, while the rainfall for the State as a whole averaged about 40 per cent more than the normal, the amounts and distribution agreeing quite closely with August, 1927, and 1926. There were frequent temperature changes, but the variability was usually of small range and did not persist for more than a few days. A warm spell did prevail from about the 10th to 15th, but nowhere did the day values reach 100°, 99° being the highest. Values of 100° or higher are quite common in August, and the current month made the third in 40 years that did not experience 100° or higher. As a rule the night temperatures ran slightly higher than usual, while the day values rather persisted in a tendency to lower than normal.

While there were a few thunderstorm squalls of short duration, there was no damage or loss reported. There was some hail, attending feature of thunderstorms, but the stones were either too small or fell for so short a time that there was no

The month's weather was generally favorable for outdoor work in all parts of the State. At the opening of the month there were many local areas in need of rain but a generous supply was furnished by or before the 9th, and good showers followed at favorable intervals to the close of the month. All growing crops did well, and a large hay crop was stacked.

TEMPERATURE.

The monthly mean temperature for the State, 68 stations reporting, was 76.4°, or only about 0.4° above the normal, and about 5° warmer than August, 1927. The temperature distribution was uniform, the month being without any decided hot spells. Each five-day period was characterized by having small plus and negative departures. The maximum for the month was 99°, a little warmer than last August, and the third August in more than forty years that did not experience the value 100° in some part of the State. The average number of days with 90° or higher was 15. A few nights during the last week cooled down to the 40's but that is quite common for August.

PRECIPITATION.

The average precipitation for the State, 99 stations reporting, was 5.35 inches, or 1.67 inches greater than the 56 years' average, and the third consecutive August with rainfall above the normal. All sections received more than the normal, but no part of either the month or the State was at any time very wet. The rains of the 1st, 4th, and 9th were the most general and generous for about a month, followed by a showery period from the 17th to the 25th, the final rain of the month being on the 29-30th. The greatest monthly amount was 11.24 inches at Galena; and the greatest amount in any 24 consecutive hours was 5.52 inches, on the 1st at Boonville.

MISCELLANEOUS PHENOMENA.

Fogs, dense. -10th, 13th, 19th, and 26th.

Hail, small, without material damage. -St. Louis, 9th; Warrenton, 21st, Neosho 22d, and Brunswick, 26th.

Halos, lunar.—None. Solar.—1st, 8th, 11th, 12th, 24th, 30th and 31st.

Thunderstorms. - Local, 1st, 4th, 5th, 6th, 8th, 14th, 15th,

18th, 20th, 21st, 26th, 28th, and 30th. General, 3d, 7th, 9th, 16th, 17th, 22d, 23d, and 29th.

OBSERVERS REMARKS.

OBSERVERS REMARKS.

Brunswick.—Heavy fog on the 19th. Large hail at 5 p. m. of the 26th; no damage.
Gorin.—Warm; drying fast at end of the month.
Macon.—Nice rains; corn maturing fine.
Unionville.—Fog on the 26th.
Warrenton.—Hail on the 21st.
Aurora.—Fog in early morning on the 10th, 19th and 26th.
Farmington.—A pleasant summer month. Latter half mild and humid which caused grapes to ripen poorly. Tomatoes were also damaged. Most farm crops are thriving.
Lockwood.—A very favorable month; corn is good; plowing for fall seeding finished; pastures good. Conditions are good and there is ample moisture for all crops. Wild hay is also good.
Neosho.—Hail on the 22d.
Salem.—Dense fog until 8 a. m. on the 13th and 19th.
Lamonte.—Fall pastures good: soy beans in fine shape for hay; some plowing for wheat. Early corn ripening.
Edgerton.—Rain is needed as the ground is dry and hard; fall plowing has begun but ground plows had.

RESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

18RAN 1930	essure ()	Me: relai humi	tive	Suns	hine		1	Wind		
AUG Stations NUERSITY OF	8/23/3/	9				t ro	y y	Max	x. velo	city
W Stations	Merric Sea-lo			hours	age	move-	verage hour- ly velocity	per	nc	
1,0,140,	M barometri (Sea-	n.	m.	al h	cent	otal m	rag	iles p	Direction	Ð
"IEKS"	bar	7 a.	7 p.	Total	Percentage of possible	Total	Ave	Miles	Dir	Date
Columbia Hannibal	29.99 29.99	89 84	74	306	72	3,775	5.1 6.5	22 26	sw.	20 5
Kansas City	29.99	82	6i	352	83	4,873 5,414	7.3	40	w. n.	7
St. Joseph	29.96	87	62	290	68	4,546	6.1	38	w.	3
St. Louis	30.00	82	62	251	59	6,552	8.8	38	sw.	4 7
Springfield Cairo, Ill	30.02 30.01	89 88	70 73	308	73	5,247 4,058	7.1 5.5	29 34	nw.	21
Keokuk, lowa	30.01	81	62	330	78	4,096	5.5	24	s.	20
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Beginning January 1, 1928 wind velocities are by 3-cup anemometers.

COMPARATIVE DATA FOR AUGUST.

		Temper	ature			Precipita		Number of days								
Year	Меап	Departure	Highest	Lowest	Mean	Departure	Greatest in 24 hours	Total snowfall, unmelted	With .01 inch or more	Clear	Partly cloudy	Cloudy				
1888	74.05 78.33 72.83 74.33 72.80 74.13 75.88 80.33 75.04 75.16 76.16 77.63 77.64 79.5 76.16 79.5 76.16 77.76 78.88 77.76	-1.6 -2.1 -2.3 -2.4 -1.3 -2.8 +1.4 -0.3 +1.0 -1.5 +0.2 +4.7 +2.8 -0.6 -1.2 +4.7 +2.8 +1.0 +1.7 +2.8 +1.0 +1.7 +2.9 +1.8 -6.6 -2.9 +1.8 -6.9 -2.9 +1.8 -1.9 +1.8 -1.9 +1.9 +1.9 +1.9 +1.9 +1.9 +1.9 +1.9 +	110 101 104 108 100 100 101 101 104 103 107 105 109 102 101 109 102 101 109 104 111 106 98 107 104 111 106 108 108 108 109 109 109 109 109 109 109 109 109 109	48 48 40 40 40 40 40 40 41 41 41 48 48 46 42 48 50 9 45	7,25 1,96 4,84 2,42 2,20 3,03 3,35 3,51 1,88 6,16 5,46 4,72 3,71 0,55 7,86 4,19 1,25 4,19 1,25 4,19 1,25 4,19 1,25 4,19 1,25 4,19 1,25	-3.80 -1.49 +1.39 +1.89 -1.03 -1.06 -1.87 +0.78 -0.20 -1.06 -0.42 -1.57 +2.71 -1.95 +2.01 +1.24 +0.27 +0.26 +0.49 +0.49 +0.49 +1.63 -1.63 +1.63 +0.43 +1.63 +1.67	4,55 5,00 4,75 5,00 4,75 5,00 4,75 4,75 4,75 4,75 4,75 4,75 4,75 4,75		11 14 9 8 6 4 5 7 6 6 5 5 10 10 8 8 11 19 8 8 2 9 12 7 9 9 9 9 16 9 16 9 17 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	 17, 18 14, 15, 17, 18, 19, 19, 14, 15, 17, 18, 19, 14, 15, 17, 17, 18, 16, 17, 17, 17, 17, 17, 17, 17, 17, 17, 17		6315433336455765178627057558756447776				

		,			Cli	mato	logic	al Da	ta fo	r A	ugus	t, 192	8							
	1. 19				Temper	ature, i	n deg	rees Fa	dır.	1	Preci	pltation	, in in	ches.	Nun	ıber	of d	ays.	ion	
Stations.	Countles.	ď.	Length of record,	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	With precip.,	Clear.	Partly cloudy.	Cloudy.	Prevailing direction of wind.	Observers.
Northeast Plain Brinswick Clifton Hill Columbin Downling Fayette Fultou Gorin Hannibal Jefferson Clty Kirksville Louisiana Macou Mexico Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Unitonville Warrenton Keokuk, lown Section means and	Chariton Inndolph Boone Schuyler Iloward Callaway Scotland Marion Cole Adair Pike Marcon Andrain Monroe St. Charles St. Louis City do Shelby Lewis Putnan Warren Lee In extremes	652 731 784 876 661 818 700 534 557 800 748 456 568 578 779 650 1.062 816	48 28 37 6 47 39 40 35 38 33 28 38 33 15 31 45 55	77.0 74.8 75.8 75.8 76.6 77.0 73.6 75.0 75.6 75.4 77.2 77.4 77.4 77.4 77.9 75.9	+ 3.2 - 1.4 + 0.2 - 0.5 - 0.5 + 1.6 + 0.3 + 1.0 - 1.4 - 0.7 + 0.5 + 0.1 + 0.2 - 0.8 + 0.6 + 0.9 + 0.9	95 95 92 95 96 91 95 98 94 96 94 96 94 94 94 98	8† 16 16 16 16 17 16 4 2 2† 2† 2† 28 28 15 8† 16 4 4	53 54 59 50 54 57 58 58 51 45 51 45 56 60 61 58 60 61	30 31 31 31 25 31 25 31 25 22 25 31 25 25 31 25 25 22 25 31 25 22 25 31	31 27 23 30 32 29 26 31 40 42 28 31 34 23 20 30 32 28 42 24 25 42	5.86 6.05 3.22 4.28 5.59 4.29 3.0.96 5.63 4.70 1.40 4.34 3.94 3.34 3.25 2.85 7.65 5.54 4.13	+1.97 +2.02 +0.18 +0.76 +2.37 +0.78 +0.23 -2.42 +2.57 +1.38 -2.33 -2.42 +0.65 +0.11 +1.84 -2.36 0.00 +2.36 -0.53 +0.70	1.25 3.02 0.66 2.87 1.30 1.94 1.88 0.47 1.85 2.63 0.75 1.20 1.92 1.92 1.92 1.94 1.44 0.98 0.98 0.92 1.55 1.23 4.45	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	12 9 11 5 11 15 9 11 6 10 11 11 11 5 8 10 7 9 1	20 23 16 21 5 16 16 12 20 12 21 25 19 16 13 15 15 15 15 17	0 2 10 7 22 6 11 3 4 19 4 0 6 6 6 11 11 7	111 6 5 3 4 9 4 7 7 7 6 6 6 6 6 9 7 5 4 5 6 6 7 6	SW. S. Se. SW. S. S. SW. SW. SW.	O. K. Benecke Dr. A. J. Bradsler U. S. Weather Bureau James Taylor J. D. Settle Chamber of Commerce J. W. Pulliam U. S. Weather Bureau Miss Emma Swift Prof. J. S. Stokes Stark Bros. Nurseries W. C. Brown Mrs. Abbie Snoddy J. S. Conway L. C. Saeger U. S. Weather Bureau St. Louis University J. C. Jewett Frank Hall Geo. W. Davis Prof. A. W. Ebeling U. S. Weather Bureau
Southeast Lowlands Campbell. Caruthersville. Doniphan Juckson Marble Hill Morehouse Poplar Bluff Sikeston Cairo, Ill. Section means and	Dunklin Pemiscot Ripley Cape Girardeau Bollinger New Madrid Butler Scott Alexander, III extremes	314 265 344 428 470 289 329 318 358	2 31 23 36 32 26 23 22 52	78.8 78.6 76.0 78.6 78.9 78.8 ⁴ 78.7 78.3	+ 1.2 - 0.2 + 1.6 + 0.9 + 1.2 + 0.9 + 0.9	97 95 95 96 96 96 97	15† 28 9 28 16 16 14 15†	61 64 62 56 60 64 63 63 56	7 31 6† 26 31 22 31 6†	35 32 34 30 28 29 21 35	5.81 5.48 5.89 5.04 4.10 5.76 6.58 4.77 3.95 5.33	+1.91 +1.58 +1.43 +0.60 +1.95 +2.31 +0.96 +0.93 +1.53	1.75 2.00 1.52 0.95 1.50 1.64 1.63 1.91 0.92 2.00	0 0 0 0 0 0 0	9 9 9 13 8 9 11 8 10	14 13 1 6 12 18 18 17 8 11	7 8 28 12 12 9 8 6 11 12	10 10 2 13 7 4 5 8 12 8	s. s. sw. s. w. sw. s. w.	Jeff. King Sam Smith W. W. Martin John G. Putz R. A. DeWitt John A. Spence J. H. Wolpers Glen R. Fisher U. S. Wenther Burean
Ozark Plateau Arcadia Aurofra Birchtres (near) Bolivar Dean if Eldon Farmington Goodland Greenville Hailey Koshkonong Lebunon Lockwood Mountain (frove(near) Neosho Rolla Salem(near) Setignun Seymour (near) Springfield Section meuns and	Shannon Polk Melonaid Miller St. Francois Iron Wayne Barry Oregon Laclede Unde Wright Newton Phelps Dent Barry	1,071 1,000 934 918 1,000 381 1,350 958 1,265 1,078 1,463 1,011 1,099 1,173 1,542 1,642 1,324	46 37 32 33 28 31 16 33 5 2 26 39 21 26 39 27 23 25 21 39	73.7 76.6 76.4 77.8 76.8 75.4 75.4 76.4 76.9 76.9 74.6 77.7 75.3 75.9 76.9	- 0 8 - 0.2 + 0.5 	91 92 93 96 96 95 95 95 94 95 93 93 93 91 96	28 28 16t 28 16t 28 8 16 14 8t 17 8t 14 18 18 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	56 57 54 56 56 54 54 53 56 57 56 59 56 59 58	13 31 22 31 12 31 31 31 31 31 31 31 31 24 31 24 31	27 25 32 29 33 33 34 25 34 36 30 29 27 28 8 26 30 24 36	5.72 8.52 7.41 6.22 5.78 5.33 3.93 3.09 5.58 5.91 9.62 5.10 8.66 5.18 8.66 5.18	+2.00 +4.25 +3.02 +1.18 +1.18 +2.40 +1.30 	1.36 3.86 1.60 3.45 1.47 1.59 1.22 1.00 3.45 0.92 1.21 2.03 1.41 4.86 1.04 1.70 4.31 1.70 4.86 4.86		9 8 12 7 9 10 10 6 7 15 6 12 9 12 11 8 8 13 10	26 23 20 27 2 14 12 25 10 ^a 16 16 14 23 18 20 23 18	0 2 8 0 21 11 2 13 10 11 15 7 11 9 9 9 5 9	5 6 3 4 5 5 8 4 7 7 5 4 4 2 2 3 4	se. sw. s. sw. sw. sw. sw. sw. sw. sw. sw.	Arcadia College W. T. Troughton V. H. Kirkendall Southwest Baptist College H. E. Dean E. H. Shepherd Robert Forsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lou Muleare C. S. Crow Mo. Fruit Exp. Sta. U. S. Fisheries Sta. Prof. Elmo G. Harris A. C. Leech Floyd E. Fawver Im H. Hailey U. S. Weather Bureau
Southwest Plain Appleton City. Centerview Clinton. Hurrisonville Lamar. Lamonte Marshall Nevnda Wursaw Section means and	Johnson Henry Cass. Barton. Pettis Saline. Vernon	779 862 687	33 40 34 50 40 26 38 34 27	78.0 77.8 79.4 75.6 77.7 76.8 7 77.4 77.6	+ 0.2 + 0.8 + 2.6 - 0.2 + 0.2 + 0.1 + 0.8 0.0 + 0.6	95 97 99 95 95 98 94 95	15† 28 15 10† 28 15 16 16 16	56 54 54 52 56 54 55 53 52	24 24 24 24 24 31 24 31 31 31 24	28 29 30 28 27 35 32 30 35	7.35 7.26 5.54 6.24 4.98 1.58 4.52 6.71 5.52	+3.61 +3.67 +2.18 +2.09 +0.80 -2.14 +1.01 +2.42 +1.70	2.46 1.64 1.34 1.69 2.50 0.53 2.04 3.50 3.50	0 0 0 0 0 0	9 10 9 10 9 6 6 7 8	14 12 ^h 18 6 13 19 18 8 14	15 8 ^h 12 1 12 10 8 18 11	2 3h 1 24 6 2 .5 5 6	ne. se. sw. sw. s. s. e. sw.	W. G. Bigelow E. A. Markey A. E. Derwent, M. D. John H. Patterson Jesse A. Mann J. E. Wheeler Dr. W. H. Black George A. Kampp Everett Martin
	Nodaway Platte Worth Jackson Caldwell Gentry Lafayette Nodaway Holt Buchanan Atchison	980 856 1,134 963 1,020 1,095 688 1,169 1,048 967 916 822		75.8	+ 1.0 - 0.7 + 1.1 - 0.5 + 0.6 6 - 1.9 - 2.2 + 0.8 + 0.4 + 0.4	96 96 95 93 93 94 94 96 94 97 95 93 95 97	2 15 8† 27 15 27 15 15† 8 10† 27 21 10†	49 48 48 51 48 54 49 51 48 49 51 46 46	24 25 24 24 24 24 24 24 24 24 24 24 24 24 24	27 41 33 35 28 26 35 28 28 30 23 27 30 41 42	6.50 4.87 4.81 2.14 4.58 8.79 2.91 3.22 2.50 5.62 4.83 4.86 4.62 5.35	+2.62 +0.21 +1.33 -1.70 +0.95 +4.70 -1.00 -1.36 +1.65 +1.42 +0.99 +1.18 +0.99 +1.67	3.30 2.20 1.80 0.55 2.27 3.87 0.95 1.25 1.00 1.47 2.08 2.00 3.87	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 14 7 8 9 9 9 10 7 10 7 10 9	17 20 16 21 22 16 16 23 22 18 18 17 20 19	9 10 12 6 6 6 11 7 6 7 10 8 8 8 7 8	5 1 3 4 3 4 8 2 2 3 5 6 4 4 6	s. e. se. se. se. se. se. se. se. se. se	M. H. Moulton Wm. J. Olenhouse Fr. Adelhelm Hess Fred L. Stiff W. P. Spillman U. S. Weather Bureau Linn Terry H. L. Yates Miss Carrle Loomis J. R. Brink Mina Wright U. S. Wenther Bureau Albert Volker W. H. Estes

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

Reference letters *, b, e, appearing in the table indicate number of days missing; for example, b, represents two days, etc.
† Also on other dates. †† Received too late to be included in means and summaries. ‡‡ Post-office address of Dean is Anderson.

Elescritis Malesterph		Daily Precipitation for August, 1928 Day of month.																																
Symbols Symb	Stations	Druinaga.														Γ	ауо	of mo	nth.	. 1														
Second Minor S.	Stations.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	To
### STATE OF THE PROPERTY OF T		Milanami	E 50			00			CO	10	0.1	CE							00	05			co		05	40						00		0.60
Section Sect	Brunswick !!	Cuand	1 95		1					05	20							 Т.	. 15				.40		.38	. 17		3 02	i.i5	••••	13	.18		5.86
Section Sect	Columbia ***	Missouri Mississippi			.38	$\frac{.28}{2.87}$		T.	.57		.57							т.	.10	••••		.40	.01 .70	T. T.	.57			.30 T.	.04	• • • •	.34	.04		3.22 4.28
Demonstrate Manual Sc. March Sc.	Fulton	do	1.94						.12		.10	.05							_	199			1 06	1					.25			1.30		4.29
March Marc	Hamibal***	do	52		1	1 .02	.06		11.25	08							T.	.14	.33			1.	.80	Ť.	. 12			.03			.05			0.96
Company Comp	Jefferson City 11 Kirksville	do Mississippi	.95			$\frac{.30}{2.63}$.05		1.85	.05									.35				65		.03	.94	••••	46				.46		5.63 4.70
Section Company Comp	Macon #1					1.10	.10		.12	Т.	1.20	10				1			. 50	18			1'2		.50	.29			.05	1		1		4.34
Company Comp	Milanii	MISSISSIDDI	. F. O.			. 99			1 . 172	09			1						.12			T.	.28						1.33					5.96
Selections of the selection of the selec	Paelfic	Meramec Missouri	.12	.05	T.	.50	.92		.02	.10	17	.88						.25	.01	.08			.38			$\frac{1.38}{1.92}$	T.					'n.		3.57
Endowline Marsusco Mississippi S. Francis S. Franc	St. Louis (2)*	do	.34	1	. 18	.40			1 .38		. A.								,62	.04			.29		.65 .98	.05	.01	т.			т.	.01		3.25
Warrenton	Steffenville	do				1,55	i					.09							.75				. 65	.45	.35	1.20		T.	Ť.			T.		3.75
Secretary Secret	Unionville	Chariton	1.12	2	2.25 T.	2.20	.i2		1.75		.85 T.							T.		.61			.20		.11	.54		.96	.25			T.		5.54
Camber		do			. 70	.58		••••	T.		••••	••••	••••	••••	••••			1.	.10	••••		.31	••••	.34	.60		••••	T.	••••	••••	.09		•••	2.67
Destrict S. Francis 4 1 1 2 2 2 1 4 7 1 5 5 5 Destrict 1 1 1 1 2 2 2 1 4 7 1 5 5 Destrict 1 1 1 1 1 1 1 1 1	Campbell!	Mississippi	.38	3			.36					T.						.50		.80	.14		.62			1.08	.10						.45	5.35
Jackson Michelphyl.	Dexter II	St. Francis	.08	5 Т. 1			.17	.02											2.00	1.26	.23	1,10	1.14			.27	.14			• • • • • • • • • • • • • • • • • • • •		70	.04	4.68
Section	Jackson	Mississippi	56	S			.95	• • • •		.02	.03					.42			.50	.18	.03		.75		.67	.46	.04							5.04
Carlon III	Morehouse New Mndrid!	do	.]1.86	6.01	1			.25	.01			.04					.44			.45	.09		1.64 .30	.15		.53	60					.12	.87 1.93	5.76 5.93
Control Patron New York Control New York New Yor	Sikeston II	Mississippl						1.03	.20							100		• • • • • • • • • • • • • • • • • • • •		.76	.20		.64											
ABTOPS ABORDO ABORDO		do	.0:			1	.00		.09							1									.02	.00	••••						.03	3.90
Bollvare	Aurora	Neosho				3.86	5 T.		.02		.67																							5.72 8.52
Preserve 1.5	Bolivar	Osage	2 85			2.01		07.07	57		1.30					.23 ·				1	_			_		_						93		1
Farmington St. Francis 14	Dean	MISSOURI	11.4			. 4.	LI .Ud			.20										1.68			1.00		.35	.89								6.22 5.16
	Fredericktown	St. Francis	1.14	2	:		$\frac{1.23}{1.18}$	3	.03		.27	i							T.	.32			1.59		.51	$\frac{.53}{2.30}$.08	.11					J	5.78
Hailey White	Goodland	Black	. 18	8	. .20)	1.22	2								.40	.17	io		1.15 1.15	.75		.56		.25	1.10						1 00		5.33
South Sout	Hailey Koshkonong	White				3.48	5	.45	5		.20)								11.80						1.00	1.00)				: i.i.	.53	7.90
Newford Newford A	Lockwood	da	.] .97	7	. 2.03	.58	3											.78	T.	.32			1.12 1.12	.21 1.25	i.48	1.21	.04	.10				. 08		5.98
Seignate Neosho 4.31 3.5 3.5 1.8 T T 3.0 4.37 5.0 4.7 7.1 7.1 5.0 5.0 5.0 5.0 1.7 7.1	Neosho	Neosho	.00			4.86	6 1.24	T.	24	1111	1.00	0.05							T.	1 .94				1 95	85	25	27		1			. 21		9.62
Seignate Neosho 4.31 3.5 3.5 1.8 T T 3.0 4.37 5.0 4.7 7.1 7.1 5.0 5.0 5.0 5.0 1.7 7.1	Rolla II	Merameedo	. 68	8	56	. 48	3 .24	.04	T		.46 .30						.32 T.		.42	.31 1.49		.60	.06	.17	1.04 .70	.23 1.00	.03				.06	3		4.65
Stover	Seymour (near)	White	. 8:	i		1.70	1 0	.27			T.	.18				T.	41		T.	1.62				.60	.70	.50	.71					:		5.18
Southwest Plain Southwest	Stectville	Meramee Missouri	1.78	8		66	5 .42 3 .02	2	.51	.04	.01	.25								.65	.15		.45		.26	1.10	.45 T.		.20			.07		5.20 4.96
Appleton City	Tuscumbia	Osage White	1.2	5		.3:	58	.12	.27	.17		00	5				.04		.04	.07	T'.		.98		.21	$\frac{2.45}{2.10}$.02				41		6.28 5.44
Centerview Missouri .25		Osage			Т.	2.46	6	T.	.53	.73	3 .31					T.			.38					.15	1.85	.14						80		7.35
Concordia Missouri	Centerview	Missourl		5		1.20	5	1.64	87	15	i 10								1.51					$\frac{1.45}{1.25}$	$\frac{1.30}{1.34}$.47	••••	.02			28	3		7.26 5.54
Marshull do	HarrisonvIlle	I Missouri							1 62		/1						1	1	1 41	HERE IS					61			1				11 630		1 5.55
Novath Osage 1.18 15 T. 14 T. 65 2.04 3.66 4.52 4.52 4.52	Lamoute	Missouri		-													1														1			
Wilest	Marshall Nevada	Osage				1.18	3	.15										'n.	.14	T.				.65	2.04							.36		4.52
Northwest Plateau Cirrund Cirr	Warsaw	do	3.50	0		.78	 1 T.		. 15 . 15	.82 29 T.	T.								.62	.14			 T.	.66 .45	1.48 1.48							. 09		6.71
																																		0.00
	Bethany	Grand		8	3.30	1.13	3		.07									T.	1.17	60			Ť.		2.28 2.28			.20	14		····	T.		
	Conception	Missourl			1.80	2.20	5		.55	.16	Ť.						••••	30 T.	.76	T.			.00		1.26 .01	.04		.26 T.	.18		.18	3	T.	4.81
	Gallatin II	Grand do				1.0	1		.25		.08	3							.30	.60					.13	Т.								2.37
	Kansas City	Missouri Grand			T.	.98	5		3.37	.77	.08	3					••••	.19	.31	.41				.46	.03	.18		19	.23	3	1.06	.40		8.79 2.91 3.22
Oregon do 1,23 02 72 15. 39 1.27 1.47 22 15. 5.6. St. Joseph*** do 2.08 72 06 06 38 1.06 T. 03 19 08 17. 4.86 Tarkio do 1.50 132 78 76 34 15 4.86 Trenton 02 06 02 66 06 1.28 43 05 T 4.80	Lexington	do	.43	3	2:	.78	5		85	.40	0							.74	1.15	.25				.07 T.	.09 1.00	.14		.16			.15	.12		4.25 2.50
Trenton. 1.50	Oregon St. Joseph***.	do			. 1.23 2.08	3 .02	2		72	.06	.18							.39	$\frac{1.27}{1.06}$				т.	.03	1.47			.22			.15			5.62 4.83
	Trenton	Grand			02	2.00	· · · ·		.01		.15						T.	.02	.78			.06		••••	.76 1.28		••••	.34			.08	T.		4.86
	-						1													1	1													

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation.

11 Precipitation measured in the morning; amount then recorded is for the preceding 24 hours

T. Trace, or less than 0.01 inch.

*** Regular U.S. Weather Bureau station; precipitation is for 24-hour period, midnight to midnight.

** Precipitation in the next following measurement; separate dates of fall not recorded.

** Precipitation is for 24-hour period midnight to midnight.

Daily Temperatures for August, 1928																																
Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	23	30	31	Mean
Northeast Plain Brunswick § Maximum															İ	Ì	i		i	İ	1	j	Ť	Ť						1	Ť	
/ Minimum	91 67	72	91 74	81 68	89 66	92 67	88 68	95 68	92 69	93 69	89 65	87 61	90 63	94 64	95 69	93 72	80 71	89 68	90 64	92 65	86 65	83 62	81 65	77 55 72	78 55	88 60	94 67	92 72 91	90 73	84 53	81 58	88.3 65.6
Columbia	87 65	91 72	91 68	80 68	86 67	89 70	83 68	90 70	85 67	89 67	82 66	82 63 87	85 63	90 69	92 70	93 72 92 72 96 67	79	82 69 87	86 65	90 69	81 66	74 63 76	81 65	72 60	75 61	83 67	92 72	73	91 70	77 61	75, 59	84.6 67.0
Fayette	89 63	66	91 70	80 65	90 63	92 63	89 65	93	89 64	67 93 63 89	86 62	59 84	90 58	94 62	95 63	96 67	67	87 67 85	88 60	93 62	85 63	76 59 81	80 62	60 77 57 74	78 54 77	85 59 80	93 69	95 70 89	90 64	79 63	55.	87.5 62.8
Hannibal Maximum	90 70	74	92 68	81 68	81 69 96	91 69	90 71 93	92 68	92 71 92 70	69 93	62 82 67 86	63	85 60	90 64	73	71	71	68	88 62	91 68	81 64		81 65 79	60	58	65	93 73	76	93	79 61	76 59	86.1 67.0
Jefferson City M J Maximum	85 65 93	67	94 71	98 68 83	68	97 69 91	65 89	96 66 93	70	62		63 86 65 85 56 92 50	63 90 58 85 60 74 64 87 61 90	91 68 92 54	92 73 93 69 93 53 94 58	95 71 96 70 92 71 96 58 94 70 96 69 92 72 92 70 95 70	79 71 82 67 81 71 82 72 82 68 90 62 79 69 83	80 71	86 65	91 67 89	82 68	61 75 63 80 59 88	64	50 72 60 73 53 82 52 75 55 76 58 71 65 72 59	58 75 60 78	89 63 78 63 80	93 71	95 71 88 73	72 93 73	78 68	77 58 74	87 4 66.7
Kirksvllie	67 90	74	90 75 96	66	64 94	66 92	66	70 92 55	93 66 94	89 72	67 85 61 92 50 85 62	56	61	54	53	71 06	68	71 87 63	84 60	69	85 65 90	59	81 66	53	51 76	63	91 69	73	86 69	58	74 52 76	86.1 63.9
Louisiana Maximum Minimum Minimum Maximum Minimum Maximum Maximum Maximum Minimum Maximum	60 91	62	68	94 60 82	60 88	56 92	90 60 88	55	60	94 55 91	50	50 86	60	92 50 91	58	58	62	60	90 50	69 90 55 89 67	60	45	85 60 80	52		50	92 62 93 70	66	94 62	90 60 82	52 77	90.2 57.0 86.9
Mexicoss Maximum	66	69	91 74 95	82 67 82	64 90	66 94	88 67 87	94 67 96 67	66	66 92 67 92	62 84	59 85	59 87 58 85	63 94	94 69	70	69	90 60 87 63 87 67	89 62 91	67	81 65 85	45 78 58 75 60	63	55	48. 79. 51. 81. 57. 74. 60. 78. 48.	50 85 59 82 59 83 66	70,	94 66 90 73 94 72	89 70	61	54 71	61.8
Minimum	67 89	69	73 92	82 67 86	65 89	69 91	. 7 0	67 92	89 67 89	67 92	63	60	58 85	64	93 69	69	87		63 87	83 67 89 72 87 68 90 67	85 66 83	60,	63 80	58	57	59	65	72	93, 73	79 65 80	56	65.3 86.1
St. Louis(1)	68 92	72 93	74 90	70	71 84	72 90	69 90	75- 94	66 92	73 88	79 66 81	83 65 85	65 85 58	88 71 92	90 73 94	72 92	68 80 67 81 73	84 72 85 57 83	68	72 87	60	80 65 80 56 80	68	65 72	60 78	66	70 90 67	94 75 86 70 95 73	90 72 81	69- 82	62 75 50	69.1 85.9
Warrenton	66 90	73 94	65 92	65 80	60 87 70	65 92	65 86	70 95	65 88	70 90	84 58 87	53 84	58 88 60	92 65 93 67	66	70 95	67 84	57 83	88 60 88	68 90	81 62 85 66	56 80	65 81	55 79	48 74 60	78 62 82 62	67 93	70. 95	64	54 86	50 76	62.5
Minimum	66	72	76	67	70	68	68	68	70	69	64	61	60	67	93 70	70	73	70	88 61	67	66	59	67	59	60	62	93 70	73	93 72	64	57	87.2 66.7
Southeast Lowlands Campbell	95		93		89	94	96	93	95 70	93	88	90	91	96	97	95 65	97	84	90	91	85 65	81 63	91	81	83	92 66	95	96.	92 67	85	77	90.6
Caruthersvilie Maximum	66		70 76	_	69	69	61	67	70 75	67	68	67	67	69	67	_	67	69	69	64			65	69			66	68	3	70		67.0
Donipitanj Maximum	70 94	94	93	90	75 88	74 93 67	74 94	76 94	91	72 93	73 87	71 88 65	74 88 67	75 91	74 91	73 94	73 93	70 83 68	71 88	72 91	66 87 75	67 88	72 91	71 74	70 87	71 89 67	73 93	74 95	74 92	72 82	76	72.3 89.4
Jackson Maximum	62 89	91	72 92	92	70 88	90	67 93	70 90	69 95	69 90	68 90	85	91	70 92	68 91	68 91 64	68 89 70	68 79 68	70 86	72 91 65 89 63	84	64 79 59	69 87 65	67 79	65 78	86	68 91	69 93	68	64 85		67.8 87.9
Popiar Bluff Maximum	65 91	1 93	70 92	89	60 86	93	68 95 67	67 95	68 94 71	65 94	56 91	64 90	60 90 65	93	66 95	96	95	81	66 90	90	62 89	59 80	92 67.	75 75	61 80	61 89 66	64 90	93 ¹ 67 95 68	69 92	64 88 65	80	64 2 89.8
Sikeston	67 91	90	70 92 73	91	90	93	93	71 91	94 72	69 92 68	68 88	66 86	89	70 92 68 93 70 93 69 93	69 92	68 94 66	70 96 72	70 87 68 80	68 90 67	90 67 90 68 88 72	66 84	80 65 80	91	71 74 67 79 61 75 70 82 67 76	69 80	91 65	66 96 67 91	69	68	68		68.0 489.9
Cairo, Ili	66 88 69	90 74	90 75	88	86	91	68 92 72	69 90 72	92 76	91 74	68 80 71	66 84 68	64 87 68	93 7 2	69 90 74	91 72	88 70	80	86 71	88	61 82 64	63 79 67	66 88 70	76 70	66 79 67	86 68	91 73	92 74	89 74	81	73 63	67.7 86.5 70.9
) Minimum Ozark Plateau	09	74	13	13	. 12	12	12	12	10	14	"	00	00	12	/4	12	70	70	11	12	04	67	10	10	67	00	13	19	/4	70	w	70.9
Arcadia///) Maximum	85 65	87 67	88 68	83	82 69	85 65	89 66	90 64	85 65	89	82 64	82 61	88 56	87 61	87 64	86 64	87 66	75 60	83 63	85 61	80 64	75 57	79 60	68 66	75 62 79	84 61	87 63	91	88 67	82 70	77 59	83.4 61.0
Aurora	90	89	87	82	84 67	86	89 68	91 71	89 69	63 87 65	89	85 63	86 66	88	89 69	91	87 73	78 68	82 65	91 67	89 74	81 64	84 69	71 58	79 62	891	90	91 65 92 72 93 68	90	83 68	79 57	86.0 67.2
Birchtree	91 66	91	92	87	86 61	89 69	92 68	91 69	92 68	89 62	85 65	87 63	87 65	90 66	91 68	71 93 68.	93 67 85	85 59	87 55	88 64	84	78 54	89 66	71 58 70 65 84	78 64	67 87 65	90	93 68	89	84 68	78	87.3 65.5
Eidon \\	87 66	91 68	91	81	87	91 67	89 68	94 66	90 68	93 65	86 65	87 63 85 61	88 63	94	95 62	96 68	85 69	69 78 68 85 59 81 70 80 69	87 62	92 64	73 85 66	80 63	79 64	84			92	96	68 92 71	86 68	79 1	b88.1 b65.4
Farmington) Maximum	90 65	92 68	91 67	87 68	86 64	94 62	91 63	93 67	90 67	88 64	82	83	87 54	62 90 66	94 66	94 65	69 95 68	80 69	88 62	89 63	82 61	78 57	75 67	60 67 63 75 66 65 58 68 61	59 75 61	80 63	92 66	70 96 69 93 72 92	94 69	81 67	79	86.5 64.3
Koshkonoug Maximum	92 69	91 71	92 70	84	87	91 69	92 70	92 73 91	92 67	93 6 9	62 85 66	62 88 65	88 66	92 70	93 70	95 71	93 71	82 70	86 68		90 68	79 67	91 70	75 66	80 65	86 69	91 71	93 72	90 71	82 70	71 =	*87.9 *68.9
Lebanon Maximum Maximum	91 64	92 65	94 67	79	87 65	90 66	89 66	67	89 67	91 62	86 59	90 56	90 63	92 70 95 63	94 63	94 66	90 67	81 67 78 67 81 67 79 70	87 60	92 63	84 65	83 64	80 64	65 58	80 65 77 58 78 60	89 61	91 67	92 68	91 68	81 66	63 ° 79 53	87.2 63.6
Mountain Grove \ \ Maximum Minimum	95 65	95 68	66	66	86 62	92 64	93 67	92 68	91 63	92 64	87 61	88	88 64	94 67	95 67	92 69	92 69	78 67	88 62	88 65 91 62	87 67	82 64	81 64	68 61	78 60	86 62	91 68	68 94 69 93 67	89 69	85 ₁	57	65.0
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Rolla	93	72	73	68	68	67	89 70	90 70	86 71	90 65	86 64	86 64	88 63	91 68	91 69	93 70	85 71 85	79 70	88 65	91 68	68	78 63 81	76 68	74 59	82 63 72 62 77	86 66	91 67	93 68 91 72	90 73	68	79 59	86.6 67.2
Springfleid J Maximum { Minimum	88 64	88 70	88 7 0		85 68	84 70	86 66	90 70	87 71	87 70	83 68	85 64	85 68	89 7 0	89 69	90 71	68	76 68	8'2 64	89 69	81 69	64	80 69	69 58	63	86 69	89 72	72	88 72	68 79 67	59 77 59	84.1 67.7
Southwest Plain	01	90	90	70	85	07	90	01	90	02	91	05	90	01		00	05	0.5	90	00	83	95	80	7.1	72	80	03	05	92	80	70	87.4
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Minimum Maximum	70 90	66	68	66	68	65	68	66	70 90	68 98	67 92	88 62 90	91 67 92 65 89 64	91 77 95 68 95 68	67 99 69	92 76 93 72 95 71	67 87	68 87 69	92 70 90 65 87	68 95	64 90 68	83 65 85 66		54	57	66	73 94	72 95	73 95	65	79 57 78 67 83	66.8
Minimum Harrisonville Maximum	68	73	76	70	67 86	79 87	66 90	95 69 91	70	68	68	· 63	65	68	69 95	71 91	70	69	65 87	67 90	68 83	66 85	64 85 70 77 66	54 73	62	63 87	74 92	72 95	72 92	64	68	68.2 86.3
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Marshall Maximum	67	66	70	70	67		64	65	66	64	67	69	94 61	62	68	95 71 	69	69	63	69	93 64	63	81 70	54	58	85 58			94 73		83 56	65.1
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Warsaw Maximum	90	91	74 91	68	65 87	70 90 66	91 65 89 67	93	70 91	92	88 68 86 63	68 86	70 89	69 92 66	68	72 95	81 70 81	85 68 85	71 89 63	68 94	68 86 69	66 85 65	70 81 73	74 57 81 57	64 78 63	89 67 91 67	93 72 92 73	93 70 94 70	93 71	89 67 85 68	80	88.3
/Minimum	63	71	72	68	65	66	67	68	7 5	64	63	59	59	66	66	68	70	70	63	67	69	65	73	57	63	67	73	70	71	68	53	66.4
Northwest Plateau Chillicothe \$\sqrt{\sq}}}}}}}}}}}}} \end{\sqrt{\sq}}}}}}}}}}}}} \end{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}}}}}}}}}} \end{\sqrt{\sqrt{\sqrt{\sq}}}}}}}}}} \end{\sqrt{\sqrt{\sqrt{\sq}}}}	93	94	91	84	89	91	89	93	93	93		88	89	94	96	91	80	87	88	91	86	84	86	75 50	77	86 60	94	89	90	82	79 53	88.0
Grant City Maximum	91	92	85	65 81	85	66 88 67	89 66 89 66	67 92	57 92 67 90	65 90	61 84	58 85	60 88 60	53 90 65	68 93	70 86	81	64 83	59 86	65 87	62 81	60 82	67 79 59	71	77 48 78 50	82 64	68 90 64	71 85 66	69 87 68	56 80 55	53 73 53	62.9 85.0 63.7
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Kidders Maximum	69 91	93	66 87 69	69 82 65	84 67 85 60	88 71 87 65 93	88 63 87 63 89 66 89 67 89 65 89 66 93	90 64	71 90 64	74 90 66	85 71 82 61	85 50	89	92 71 91 64	74 94 68 96 71 85 69 97 73 94 74	72 90 68	77	60 81 68 81 62 89 68 73 60 87 64	64 89 70 87 61 89 67 80 63 90 67 89	65 92 71 91 66 93 68 81	81 66 82 59 88 65 84 60 89 61 84	60 86 65 83 59 86 65 79 62 87 65	83	70 54 72 49 78 54 65	74 59 75 50 78 58	82 64 89 67 86 52 91 66	93	87 68	93 74 88 69 92 74 77 69	78 53	75 59 77 52 82 57 67	85.7 61.9
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Maryviile	91	92	75 86	67 82 67	90 67 86 61	90	89	68 94 68	92	90	86 66	85	90	81	85 60	74 81 71	80	73	80	81	84	79	79 59	48	71 51	82 64	94 74 85 73	84 64	77 69	73 53	67 54	82.8 64.3
Oregon	94	95	67 89 66 83 66	87	89	92	89	68 95 69.	93 72 92 64 93 70 90 71	97 73	66 92 69 88 70 84	89 66	93	94 67 81 66 95 70 92 70	97	71 92 73 88 70 93	83	87	90	69 92 71 92 72 91	89	87 65	83 63 82 69 79 59 79 64	77 49 74	81 53	90 67	94	92 67	91	78 53 84 63 73 53 85 55 82 59 86	54 80 57 78 58 75 55	89.5 66.6
8t. Joseph	93	95	83	67 8 82 6 67	89 65 87 64 91	90	89	92 70	90	92	88	86 65	90	92	94	88	75 69	81 66	89	92	84	87 65	80 58	51	81 53 76 56 78 52	90 67 89 67 80	94 74 95 75 93 65	90 70	91 70 90 70 90 66	82 59	78 58	87.0 67.2
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o, b, e. etc., indicate respectively 1, 2, 3, etc., days missing from the record.

**MInstruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it aimost aiways occurs.

**WBO, St. Louis, 8-19-28-925.

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U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU. CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION. GEORGE REEDER, Meteorologist.

VOL. XXXII. COLUMBIA, MO., SEPTEMBER, 1928. No. 9.

GENERAL SUMMARY.

As viewed from the side of personal comfort, September in Missouri was a very pleasant month. Save a summer-like spell the second week, the month was mainly cool, relatively dry as a whole, with normal sunshine. Considering the State as a whole it was the driest September since 1908; and for that part of the State south of the Missouri River the driest in thirty years or more. In fact, with inappreciable rain at several stations in the Ozark region it was the driest 30-day period of record. In marked contrast to the rainfall over the southern half of the State was the generous to excessive rainfall over the northern half. Over the northwest section, especially, monthly totals ranged from 6 to 9 inches, most of it falling in one spell from the 10th to the 14th; twelve stations had in excess of 3 inches within a 24-hour period. Some small rivers went out of banks but the damage was of small concern.

There was some outstanding cool weather after the 20th Frost formed in low places on the 24th, and again on the 26th, being rather earlier than usual. The damage was confined to nipping tender vegetation in low places,

The month's weather was generally favorable for farm operations. Most crops matured satisfactorily; and fall grain sowing made good progress the last of the month, except in the southern third where the ground was too hard and dry for plowing.

TEMPERATURE.

The monthly mean temperature for the State from the records of 62 stations was 65 0°, or 4° below the normal. The daily negative departures were about equally pronounced in both northern and southern sections. Except a real summer spell of weather from the 8th to the 16th, when afternoon temperatures ranged from 90° to 95° generally, the month was mainly cool, with an outstanding cool spell from the 23d to the 26th. Frost and thin ice formed the night of the 24th at a few widely separated points, and again on the 26th, and more especially this time along the Ozark ridge from Webster County eastward to the Mississippi River. There was slight injury, confined to tender vegetation in low and exposed places.

PRECIPITATION.

The average precipitation for the State, 97 stations reporting, was 2.61 inches. This amount is about 1.12 inches less than the 56 years' average for September. The geographical distribution was noticeably uneven, showing generous to excessive amounts in the northern half of the State and equally marked deficiency in the southern half and especially in the southernthird. At many of the southern stations it was not only the driest September but also the driest 30-day period in thirty years or more. Most of the rain of the northern half fell in two distinct spells, the first being from the 10th to the 14th, and the latter 27-29th. The remainder of the month being open and fine. The heaviest monthly total was 9.04 inches, at Downing, Schuyler County. The greatest amount to fall in any 24 consecutive hours was 5.60 inches, at Unionville, Putnam County on the 12-13th.

MISCELLANEOUS PHENOMENA.

Fogs, dense. - 20th, 28th, 29th, and 30th.
Frost, light. - 24th, 25th, and 26th, generally.
Frost, heavy. - 25th, and 26th in a few low places.
Frost, killing. - To tender vegetation only in low places, on the 24th, and 26th, Hail, small. - St. Joseph on the 11th.
Halos, lunar. - 22d. Solar. - 4th, 16th, 22d, and 23d.

Thunderstorms.-2d, 10th, 11th, 12th, 13th, and 14th.

OBSERVERS REMARKS.

Maryville.—Severe wind night of the 11th. Damage about \$500 to telephone poles and nade trees.

nade trees.

Downing.—Barn struck by lightning and burned on the 12th. Loss \$500.

Kirksville.—Frosts on the 2d and 26th. Tender vegetation injured, and corn blades

Kirksville.—Frosts on the 2d and 26th. Tender vegetation injured, and corn blades dried up.
Macon.—Crops in fine shape. Best in years.
Jackson.—Driest and coolest September in 36 years; 29° on the 24th was the record for so early.
Sikeston.—Light frost on the 24th; killed tender vegetation in low places.
Farmington.—Fine month for outdoor work. Driest September in 12 years. Killing frost on 24th, unusually early.
Lebanon.—Ground hard and dry, no plowing for wheat.
Lockwood.—One of the driest Septembers on record. Ground too dry for plowing. Good corn crop.
Salem.—The soil is getting dry and hard. Water is scarce in some places. Frost on the 24th and 26th; little damage.
Warsaw.—Very dry; injurious to pastures and seeding.

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

	n pressure vel)	Mea relat humi	ive .	Suns	hine		1	Wind		
	ean ic pre level						hour-	Max	k. velo	city
Stations Stations OF	e e .	7 a. m.	7 p. m.	Total hours	Percentage of possible	Total move- ment miles	Average hou ly velocity	Miles per hour	Direction	Date
Columbia Hannibal Kansas City St. Joseph St. (Collie Springfield Cairo, Ill. Keokuk, John	30.06 30.06 30.04 30.03 30.06 30.07 30.06	85 84 73 73 74 79 79	63 49 53 50 52 55 57	284 306 269 270 312 268	76 82 72 72 72 84 	4,001 4,638 5,680 4,631 7,037 5,738 4,614 3,939	5.6 6.4 7.9 6.4 9.8 8.0 6.4 5.5	29 35 25 27 36 22 25 27	nw. nw. nw. sw. s. n. nw.	12 12 2 12 14 12 23 2

Beginning January 1, 1928 wind velocities are by 3-cup anemometers.

COMPARATIVE DATA FOR SEPTEMBER.

- 11		Temper	ature			Precipita	tion		Nun	aber	of d	ays
Year	Mean	Departure	Highest	Lowest	Mean	Departure	Greatest in 24 hours	Total snowfall, unmelted	With .01 inch or more	Clear	Partly cloudy	Cloudy
1888. 1889. 1890. 1890. 1891. 1892. 1893. 1894. 1895. 1895. 1897. 1898. 1899. 1900. 1900. 1906. 1907. 1908. 1909. 1910. 1911. 1912. 1913. 1914. 1915. 1916. 1917. 1918. 1919. 1919. 1911. 1912. 1918. 1919.	65.2 64.7 63.7 70.6 67.8 69.9 67.1,3 71.3 63.2 63.2 68.9 71.9 68.9 71.9 68.9 71.9 68.9 71.9 68.9 71.9 68.9 71.9 68.9 71.9 68.9 69.6 68.7 68.9 71.9 68.9 69.6 68.9 68.9 68.9 68.9 68.9 68	-3.7 -4.2 -5.2 +1.7 -1.1 +1.0 -0.4 +2.9 +5.4 +2.0 -5.7 -1.5 +0.7 +0.7 +0.7 +0.6 +4.6 -0.3 +0.5 +1.5 -1.2 -6.7 +1.4 +4.7 +2.6 -0.3 -5.6 +0.3 +2.6 -1.0 -5.6 -1.0 -5.7 -1.2 -1.5 -1.5 -1.5 -1.5 -1.5 -1.5 -1.5 -1.5	97 94 98 104 107 107 101 104 103 108 100 95 98 98 98 101 95 105 105 105 105 105 105 105 105 105 10	288 311 340 322 288 277 302 324 277 302 344 411 366 311 384 277 327 329 384 384 387 387 387 387 387 387 387 387 387 387	1.11 1.466 3.98 3.92 3.92 3.92 2.45 4.74 2.04 4.81 1.93 1.93 1.93 1.93 1.93 1.93 1.93 1.9	-2.56 +0.99 +0.31 -3.04 +1.26 +1.26 +1.29 +0.50 -2.93 +3.07 +1.14 +0.74 +0.18 +1.11 +4.00 +0.48 -1.74 -1.87 +0.95 +1.95	3.00 5.20 6.21 6.21 3.07 2.13 3.07 2.46 6.57 2.46 7.75 3.61 3.61 3.77 2.46 4.28 4.48 4.48 4.10 5.45 5.36 5.36 5.36 5.36 5.36 5.36 5.36 5.3		4 111 19 6 4 4 10 5 4 4 10 10 10 11 10 10 11 10 10 10 10 10 10		67 111 810 59 60 108 66 86 87 87 77 66 66 77 77	

Climatological Data for September, 1928

					Clin	natol	ogica	1 Dat	ta for	Sej	ptem	ber, 18	28							
					Temper	ature,	in deg	rees F	ahr.		Preci	pitation	, in in	ches.	Nur	aber	of d	ays.	le le	
	0 4		rd.	14.	g 1						20		-	3	نو	19.		-	Settic	8
Stations.	Counties.	Elevation, feet.	Length of record.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	With precip	Clear.	Partly cloudy.	Cloudy.	Prevailing direction of wind.	Observers.
Northeast Plain Brunswick Clifton Hill Columbia Downing Fayette Fulton Gorin Hannibal Jefferson City Kirksville Louislana Maeon Mexico Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Unlonville Warrenton Keokuk, Jowa. Section means and	Chariton Itandolph Boone Schnyler Hownrd Callaway Seothand Marion Cole Adair Pike Macon Andrain Monroe St. Charles St. Louis Citydo. Snelby Lewis Phtham Warren Lee, In	652 731 784 876 661 818 700 534 557 969 469 469 456 568 678 779 650 1,062 816 614	48 28 37 6 47 39 40 35 39 38 33 28 33 15 34 29 34 45 55	64.4 62.3 63.8 62.2 62.7 64.4 63.0 64.8 64.0 61.8 63.8 66.2 67.4 66.8 63.1 65.8 63.1 65.8	- 2.3 - 6.6 - 4.4 - 5.6 - 4.5 - 3.2 - 3.9 - 6.5 - 1.7 - 3.1 - 3.1 - 3.4 - 5.3 - 5.1 - 5.3 - 5.1 - 4.3	92 89 92 93 92 92 93 95 95 95 95 95 93 95 95 93 92 94 90 93 93 95	9 9 9 9 13 10† 9 11 9 9 9 9 13 13 13 19† 	36 34 37 32 31 32 38 35 28 35 37 43 43 43 29 32 38 35 32	25 25† 26 26 26 26 26 25 26 25 26 25 26 24 24 24† 24 24† 26 24† 26 26 27 28 28 28 28 28 28 28 28 28 28 28 28 28	37 34 32 34 40 35 33 36 46 36 37 25 25 37 25 25 34 34 34 34 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	7.43 5.46 3.33 9.04 3.63 1.41 6.35 4.42 1.56 3.23 3.94 4.26 1.63 1.70 3.40 1.75 4.18	+3.04 +0.09 +0.48 +4.33 -1.20 -2.98 +2.06 -1.72 +0.45 -0.72 -0.27 +0.94 -1.65 -1.76 -1.76 -1.76 -1.76 -1.76 -1.25 +1.22 -1.76 -1.29 +1.29	3.62 2.35 2.50 4.25 3.38 1.24 2.96 2.53 1.20 1.65 1.50 1.65 3.50 1.28 0.67 0.57 2.40 0.65 2.60 0.65 2.60	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	786986010957888588997777988	18 20 20 19* 13 20 18 24 24 18 16 27 17 20 16 20 18 18 19* 18 19* 19* 19* 19* 19* 19* 19* 19* 19* 19*	0 3 6 5 a 16 3 5 1 2 11 11 0 6 5 5 12 9 8 5 6	12 7 4 5 1 7 7 5 4 1 3 3 7 5 2 1 6 5 4 1 7 5 2 1 7 5 2 1 7 5 2 1 7 5 2 1 7 5 2 1 7 5 2 1 7 5 2 1 7 5 2 1 7 5 2 1 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7	5W. 5G. 5W. 10. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Burean James Taylor J. D. Settle Chamber of Commerce J. W. Pulliam U. S. Weather Bureau Miss Emma Swift Prof. J. S. Stokes Stark Bros. Nurseries W. C. Brown Mrs. Abble Snoddy J. S. Conway L. C. Sæeger U. S. Weather Bureau St. f.ouis University J. C. Jewett Frank Hall Geo. W. Davls Prof. A. W. Ebeling U. S. Weather Bureau
Southeast Lowlands Campbell Caruthersville Doniphau Juckson Murble Hill Morehouse Poplar Bluff Sikeston Cairo, Ill. Section means and	Dunklin Pemiscot Ripley Cape (firardean, Bollinger New Madrid Butter Scott Alexander, III	314 265 344 428 470 289 329 318 358	2 31 23 36 32 26 23 22 52	66.5 65.8 64.6 66.2 67.2 68.2 66.4	- 5.0 - 5.3 - 4.2 - 4.1 - 3.3 - 4.4	93 92 92 94 94 92 94	13 13 13 13 13 13 13 13	34 35 29 30 36 33 43 29	24 24 24 24 24 24 24 26 24	42 37 42 44 38 26 44	1.47 0.22 1.01 0.07 0.00 0.16 0.67 0.14 0.14	-2.88 -2.63 -3.48 -3.63 -2.70 -2.91 -2.72 -2.75 -2.96	1.47 0.13 0.95 0.04 0.00 0.16 0.67 0.12 0.14 1.47	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 2 2 2 0 1 1 2 1	27 19 26 13 26 27 25 22 17 22	3 9 4 10 3 3 5 6 10 6	0 2 0 7 1 0 0 2 3 2	n. n. sw. n. n. w. n. s.	Jeff. King Sam Smith W.W. Martin John G. Pntz R.A. DeWitt John A. Spence J. H. Wolpers Glen R. Fisher U. S. Weather Burean
Ozark Plateau Areadia Aurora Bircitree (near) Bolivar Dean †† Eldon Farmington Goodland Green ville Hailey Koshkonong Lebanon Lockwood Mountain Grove(near) Neosho Rolla Salem(near) Seligman Seymonn (near) Springliefd Section means and	Iron	926 1, 370 1,000 1,071 1,070 934 918 1,000 381 1,350 958 1,265 1,078 1,463 1,011 1,099 1,173 1,642 1,612 1,642	466 377 32 33 30 31 166 33 5 2 266 39 27 23 26 39 27 23 25 21 39	62.2 66.4 65.3 63.2 70.6° 64.4 65.8 62.2 67.2 64.4 67.6 65.4 67.2 65.8 62.6 68.4° 61.8 66.3 65.5	- 5.4 - 4.3 - 4.2 - 6.4 - 0.1 - 4.9 - 3.5 - 5.1 - 3.7 - 3.7 - 3.7 - 3.3 - 3.1 - 2.2 - 6.9 - 0.4 - 3.8 - 2.6 - 3.8	90 89 90 87 95 92 94 90 91 94 92 93 93 90 90 92 90 88	13† 13† 13 8† 15 9 9† 13 13 16 13 16 13 16 13 16	29 43 34 36 36 35 30 29 28 41 35 36 31 47 32 43 28	26 24 24 26 23 26 24† 24 24 24 24 26 26 26 31 24 24 24 24 24 24 24 24 24 24 24 24 24	44 31 36 42 43 42 37 44 4. 29 52 38 38 42 37 41 38 40 29 52	0.25 0.84 1.35 0.46 0.61 1.28 0.11 0.69 0.54 0.54 0.54 0.51 0.45 0.51 0.45 0.51 0.45 0.51	-3.39 -2.89 -2.24 -3.64 -3.01 -2.52 -3.11 -3.64 -2.51 -3.55 -3.70 -3.90 -3.77 -3.33 -4.13 -3.80 -4.58 -3.71 -3.40	0.25 0.48 0.86 0.46 0.53 0.63 0.07 0.25 0.02 0.45 0.46 0.15 0.14 0.15 0.11 0.13 0.25 T. 0.02 0.04	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 3 4 4 1 2 3 3 4 4 1 1 1 2 3 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1	28 26 25 28 25 ⁴ 15 16 23 27 19 19 22 25 23 27 22 25 23 27 24 23 21° 25 23 27 24 23 24 23 23	0 3 5 2 0 ⁴ 13 13 5 3 7 5 5 5 7 3 6 7 5 5 4 6	2 1 0 0 1 ^d 2 2 2 0 4 4 5 ^a 3 0 0 0 0 1 ^c 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	se. se. n. ne. se. sw. sw. s. ne. se. ne. se. sw. se. ne. se. se. se. sw. se. se. sw. s. se. se. se. se.	Areadia College W. T. Troughton V. H. Kirkendall Southwest Baptist College H. E. Dean E. H. Shepherd Robert Forsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lou Mnleare C. S. Crow Mo. Fruit Exp. Sta. Prof. Elmo G. Harris A. C. Leech Floyd E. Fawver Ira H. Hailey U. S. Weather Burean
Southwest Plain Appleton City Centerview Clinton Harrisonville Lanar Lamoute Marshall Nevadatt Warsaw Section means and	St. Cluir Johnson Henry Cass. Barton Pettis Saline. Vernon Benton extremes	853 872 765 904 980 867 779 862 687	33 40 34 50 40 26 38 34 27	66.0 67.2 68.6 64.8 67.0 66.1 67.3 67.2 66.7	- 4.3 - 2.9 - 1.6 - 3.5 - 3.6 - 4.0 - 1.8 - 2.8 - 3.2	91 91 94 93 92 94 90 93 94	8 9† 8† 8 16 8 8	38 38 38 37 41 37 39 33 33	26 26 26 25 221 26 26 26 26	37 39 41 37 41 39 36 45 45	1.31 1.91 2.50 5.29 1.14 1.73 2.64 1.15 2.12	-2.36 -1.68 -1.32 +0.93 -3.10 -2.77 -1.52 -3.17 -1.92	0.74 1.50 2.05 3.78 0.53 1.30 1.56 0.88 3.78	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 6 2 5 6 5 4 4 5	13 17 18 8 21 16 21 14 15	16 12 11 6 8 14 6 14 12	1 1 1 16 1 0 3 2 3	se. se. sw. n. sw. sw.	W. G. Blgelow E. A. Markey A. E. Derwent, M. D. John H. Patterson Jesse A. Mann J. E. Wbeeler Dr. W. H. Black George A. Kanpp Everett Martin
Northwest Plateau Bethany Chillicothe Conception Edgerton Grant City Kunsas City Kidder King City Lexington Maryville Oregon St. Joseph Tarklo Trenton Section means and		1, 048 967 916 822	35 18 38 7 23 38 34 2 42 37 71 19 24 31	63.0 63.3 64.6 64.8 ^b 63.0 66.7 61.6 66.8 65.2 60.4 64.1 64.2	- 4.0 - 6.3 - 2.6 - 2.2 - 6.1 - 1.7 - 0.2 - 3.7 - 6.2 - 3.3 - 3.7 - 4.0	92 93 91 94 90 92 91 94 92 91 92 91 90 94	9 9 8 8 8 8 8 9	29 29 35 31 35 43 33 33 34 34 37 33 31 29	26 26 26 26 25 25 25 25 25 25 26 26 26 26 26 26 26 27 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28	38 41 35 38 33 29 37 35 37 33 35 37 41	6.82 5.73 6.06 4.54 4.03 3.12 6.19 8.21 4.78 6.93 6.53 8.78 6.04 8.23 6.14	+2.96 -0.01 +2.21 +1.26 +0.04 -1.44 +1.95 +2.72 +2.79 +3.79 +3.79 +1.77 -1.12	1.85 3.40 2.88 1.78 1.85 1.91 3.20 4.00 2.05 3.40 2.98 3.07 3.29 4.08	000000000000000000000000000000000000000	997698677967878 5	18 19 14 23 20 18 19 21 21 22 21 17 19 19	8 10 13 3 9 8 3 8 7 a 6 6 9 8 8 7	4 1 3 4 1 4 8 1 1 2 3 4 3 4 3 3 4 3 3 3 3 3 3 3 3 3 3 3 3	se. sw. nw. s. s. s. s. se. se. se. se. se. se. se	M. H. Moulton Win. J. Olenhouse Fr. Adelhelm Hess Fred L Stiff W. P. Spillman U. S. Weather Bureau Linn Terry H. L. Yates Miss Carrie Loomis J. R. Brink Mina Wright U. S. Weather Bureau Albert Volker W. H. Estes
																	9,3			

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in Reference letters *, *, *, appearing in the table indicate number of days missing; for example, *, represents two days, etc.
† Also on other dates. †† Received too late to be included in means and summarics. ‡‡ Post-office address of Dean is Anderson.

								Dai	ту т	Prec	ipit	atio	on I	or a	Sept	em'	ber,	19	28							_	_						
Stations.	Drainage-														D	ay c	of mo	onth															Total.
Stations.	basins.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	To
Northeast Plain Boouville	Missouri											58	2.43	67		0.4																. 1	. 8.7
Brunswick 1	Grand Chariton		.24	1							.03	$\frac{1.07}{2.35}$	$\frac{3.62}{.85}$	$\frac{2.30}{1.66}$	T.				,						.01			.10	.15	T.	5		7.4
Columbia ***	Mississippl		i ⁰¹								.06	$\frac{.36}{1.80}$	$\frac{2.30}{4.25}$.57	.57					::::		••••		• • • •	.06	• • • •		.03	.88	.27			3.3
Fulton	Missouri do Mississippi						• • • •		• • • •			.01	$\frac{2.19}{1.24}$ $\frac{2.96}{2.96}$.01												• • • •	.38	.01	.01	.02	2		. 1.4
Gorin	do Missouri		.04								.21	1.89	1.39	.47	Ť.							Ť.		••••	Ť.		.11	.01		.00	1 3 		. 4.4
Jefferson City Kirksviile	do Mississippi			.15			••••				.25	.05 1.55	$\frac{1.20}{1.65}$.15	16															.01	١		1.5
Lonisiana	do Churiton			.10								$\frac{1.50}{1.40}$	$\frac{.90}{1.65}$.20	.05						••••							.25	.20	.10	3		. 3.9
Mexico	Mississippi Grand Mississippi		т.			_	••••					2.40	1.57 3.75 .82	.10	.10						••••		••••	••••	Τ. Γ.	••••		.10	.05	.50	2 3		. 6.
Pacifical	Meramec Missouri		.21	.07		• • • • •	••••					.31	.32	1.28		.46					••••		••••		т. Т.	т.			.06	.08	3		0.9
St. Charles	Mississippi		.16		• • • •						.06	.01	.12		$\begin{bmatrix} 1.17 \\ .57 \end{bmatrix}$										T.	••••	Ť.	.10	.05	.03	3		1.
Sheibina	do		• • • •	.08							i5		2.40 .95	1.36	.07 T.	.08						Ť.						.12	.50	7.	6 T.		. 5.3
Union Unionviile	Meramee Chariton Mississippi				••••		••••				.50 T.	.80	3.85 65	1 75	60	1					••••				Τ΄. Τ.	.05 T.	Ť.	.40	.03		1		8.
Warrenton Keokuk. Ia. ***	do		.06				••••				.34	.92	.65 1.96	.14	T.							.02		••••			. 15		.53		Ť		4.
Southeast Lowlands Campbell	St. Francis															1.47																	. 1.4
Caruthersville	Mississippi														.09										••••					.13	3		0.0 0.3
Dexter	St. Francis									:::.		T. .06				.95							••••	••••	••••	••••				T.			1.0
Murble Hill	Mississippi Mississippido														T.															Ť.			0.0
New Mudrid#	do Black															.12							••••								02	2	. 0.3
Sikeston	Mississippi do															ή.						• • • •			T.				T.	i.i	4		0.
Ozark Plateau Arcadia	St. Francis											T.				95														т			. 0.5
Aurora Birchtree (near)	Neosho			.48		11.					.09		T.		.30															.2	7		0.8
BolivarCaplinger Mills	Osage				Ť.	••••		T.		T.	.07		.46												Ť.					.02	2		0.4
Denn Eidon	Neosho Missouri					.08					.53		.63	.52								••••	••••							.13	3		0.
Farmington Fredericktown Galena	St. Francis do White									• • • •		.07				.02						••••								T.	5		0. T
Goodiand	Black					.02					.23				.25 T.	.18						••••								0.0	3		0.
Hailey	White					.08					.05					.45													.40				0.
Lebuion Lockwood	Osageda			T.							∵i0	Т.	.05	.46		.02										Т.			Ť.	.1.	$\begin{bmatrix} 6 \\ \dots \end{bmatrix}$		0.
Mountain Grove	White Neasho							T.			.45		50	15	. 14						••••		• • • • • • • • • • • • • • • • • • •										0.
Rolla II	Meramee						1						151		13			1					1		1		1	3		140			. 0.
Seligmun Seymour (near)	Neosho Whitedo Merumec Missouri		Ť.			.07					7.25		T.	ļ::::							••••	• • • •											0,
Springfield ***	Alexander		1	1 06	1		\$.01	15	T.	T.						••••				.04		Т.	T.	• • • •	: ::::		0.0
Stover Tusenmhia Willow Sprgs. (near)	Osage			.14								.03	.51	.11		29						• • • •				.05			.08	.0.	5		. 0.
Southwest Plain		1									}																				1		-
Appleton City Centerview	Osage Missouri Osage		.19		Т.			T.			.30	.02	1.50	05.05	.03													1.01	i T.				. 19
Clinton	Osage Osage							····			.45	.56	1.08																				1 2.
Joplin*Lumur	Neashado										.35	.26	T.	.19														••••		.54	3		0.
Lamonte	Missouri			1					l																								
Nevada Osceola	Osuge do do do do do do do do do do do do do		.18		T.	••••					.62		1.56		1.28										1								.1 2.1
Warsaw	Missouri			1.08			• • • • •				T 14	.62	1.97	4.37	T'.	Ť.	••••			••••		••••			T.		••••	Ť.	T.				. 8.6
Northwest Plateau Albany	Grand													-													1	1	1	ł		1	
Bethany	do		.05								1.10 .12	$\frac{1.46}{3.40}$	1.65	.24	1.85			1			r.	.01					.16	.03	.30	.0.	2 .01	i	6. 5.
Edgerton	do				1						.79	1.38	1.16	.03	1.42				• • • •	••••			التنتنا					T	.16	4,			6.4.8.
Gallatin	dodo										.86	$\frac{1.01}{1.21}$.31	.28	23		• • • •				.06		••••		Ť.		12	.02	2 . 29	1.	. Ť.		4.
King City	Grand Missouri										T 1.06	$\frac{3.20}{4.00}$	1.92	.78	1.70													.02	T. T.				.1 8.3
Maryville	do			.08							.18	$\frac{1.62}{1.97}$	$\frac{2.05}{.58}$.77	3.40	::::					.10	• • • •	• • • •					.02	.04	.3:	2		6.
Oregon	do		Ť.			••••		Ť.			.61	3.98	1.97 2.51	.58	.78						.05	.01			т.		T		T.				8.
Tarkio	(10										1.90	3.29	2.50	.05	.13							Ť.	••••		••••		20		.58				8.2
		1															1		1											1	1	1	

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation.

1 Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

T. Trace, or less than 0.01 inch.

** Precipitation in the next following measurement; separate dates of fall not recorded.

* Precipitation is for 24-hour period midnight.

						D	aily	Те	mpe	erat	ure	s fo	r S	epte	emb	er,	192	8														
Stations	1	2	8	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	81 1	Мевп
Northeast Plain Brunswick §§) Maximum	84	81	73	76	82	81	83	91	92	76	76	00	01	80	90	(10)	75	75	77	90	71	70	60	577	61	70	CV	60	64	70		77 1
Columbia Maximum	54	60	50 70	46 74	48	49	53	54	63 92	76 62 80	68 86	62 85	91 65 90	68 81	89 58 85	90 61 89	75 48 71	75 46 71	77 48 72	85 49 82	71 53 69	79 47 76	63 47 61	57 42 64	61 36 60	70 38 66	68 41 66	62 45 64	68 48 63	78 46 74	11	77.1 51.8 75.7
Fayette Minimum	80 56 83 50	77 57 82 54	50 74	45 77	76 52 80	77 50 82	78 50 82	91 63 91 53	66 93	69		62 85 62 83 60 84 62 89 63 79 51 86 62 87 65 86 62 86 63	90 70 92 61 89 70 91 63 81 65 92 70 90 63 93 74 85 62 92 71	62	57 89	61 91	55 74	47	46	51 82	49	44 80	41 65	38 60	37 64	37 70 31	44 71	44 62	47 68	43 72		52.0 77.6
Hannibal) Maximum	82	77	47	45 77 42 75 46 77 46 75 50 75 45 77 41 74 56 75 42 78 48	46 77	44 77	46 80	53 90	57 93	69 77 65 83 69 87 69 81 62 85 59 83 70 85 87 70 86 87 70 87 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 70 87 87 87 87 87 87 87 87 87 87 87 87 87	68 79 65 74	60 84	61 89	82 67 83	52 86	55:	50 71	42 70	42 72	43 79	78 42 70	40 77 47	43 58	35 56	33 57	65	41 65	40° 52	47° 60	42 71		47.8 74.4
Jefferson City \$ Maximum	59 87	77 60 75 59	70 52 72 52 71	46 77	49 76	44 77 48 77 48	49 79	61 90	68 93	69 87	67 95	62 89	70 91	62 89	58 87	90 57 89	53	46 73	73	46	52	62.	40° 62	38 66	36 61	32† 68	67	40 73	46: 74	42		51.6 •77.8
Kirksville Maximum	59 87 56 83 52 85 53 84	59 78 60	52 71	46 74	48 80	48 78	50 81	54 89	63 91 60	69 81	67 95 68 78 64	63 82	63 81	62 89 72 82 65 88 73 78 67 85	57 86	89 58 85 60	71 55 75 47	48 73	46 71	83 49 80	70 50 72	43 77	40 70	40 56	41 60	38 66	40 66	49	51 64	41 73		51.9 75.6
Louisiana Maximum	85	80	48 70	75 75	44 78	78 49 81 48 80	81	94	95	84	83	59 85	65 92	88	56 86	90	82	73 45 72	72	48 80	49 73	46 85	73	40 60	85 60	83 68	43 67	42 63 35 53	62	43 72		50.1 77.9
Macoull	84 54	55 77 58	72 40	75 45	78 46 79 49 79	80	80 59	83	93	85	83 65 78 50 86	79	90	78	60 85 55	90 55 88 58	82 55 74	40 74 45	40 74	40 82	56 70	39 72 46	46 60 39	33 55 39 61	33 59 85	28 67 36	49 66	53	62	62		50.2 74.5
Mexicoly	84 54	80	73 50	77	79	49 80 48	82	92	95 61	83	86 68	86	91 63	85	88	91	49 71 59	72 43	43 75 43	46 83 46	52 71 47	78	62	61	63	70	41 68	42 61	46: 59: 48	43 76 41		49.2 77.5 50.2
St. Louis(1) Maximum	81	78	58 72 49 73 50 71 56 70 46 71 50	74 56	48 74 58 80 64 78 54	48 78 56 80 50 79 50	49 79 50 81 55 81 50 80 52 82 49 79 61 82 50 77 55	90 61 90 54 89 58 94 54 83 56 92 49 89 61 87 55 90 60	95 65 93 59 95 61 92 68 90 58 93 64	87 70	90 69	87 65	93 74	69 90 70 80 64 89 71	58 85 64	91 58 90 68 82 56	71 52 73 58 72	71	73	78 55 80	71 59	46 75 53 77 47	62 49	38 66 43	62 46	66	42 67 49	40 65 49	68 53	73		76.9 57.9
Unionviile	61 82 52 82 56	75 60	70 46	75 42	80 64	80 50	82 50	87 55	90 58	80 65	90 69 75 62 89 68	82 60	85 62	80 64	83 56	82 56	72 44	53 74 43 71 45	52 72 43	80 46	71 59 70 46	77	66 ¹ 38 ¹	58	60 34	44 65 32 69 38	64 34	49 65 42	64 44	50 72 45		74.9 49.3
Warrenton Maximum Minimum	82 56	76 59	71 50	78 48	78 54	79 50	77 55	90 60	93 64	83 70	89 68	86 62	92 71	89 71	86 60	89 64	83 54	71 45	43 76 43	46 83 49	77 56	76 49	72 43	40: 67: 38:	61	38	66. 47	42 65 46	66	76 43	::	78.2 53.4
Southeast Lowlands	81	83	75	70	75	80	85	89	90	0.1	90	90	0.2	90	07	90	70	7.4	75	90	QE	7.5	71	70	70	7.1	50	40	72	75	1	80.6
Campbeil	56	55	77 58	76 46	75 50	50	51	55	55	91 62	89 67	89 62	93 62	70	87 64	89 57	79 62	74 50	75 45	82 40 82	81 46 85	75 49	71 49 71	70 34 71	72 43 75	71 41 73	78 44 82	80 48 81	71 54 88	75 48 76	• •	52.4
Doniphan	79	83	74	76	79	76	79	89	88	89	89	90	92	91	85	87	78	72	74	82 79 42 79 37 80 42	46 85 54 73 45 78	49 77 55 72 47 76 38 77 47	71 55 68	34 71 45 69 35 68 29 70	43 75 49 69	41 73 47 70 42 65 30 71 38	82 52 74	54 78	62 86	56 76		79.5
Jackson	79 55 81	83 55 81	74 51 75 55 84 57	· 76 46 76 44 78 48	79 49 74 47 76 48	46 78	48 85	89 52 86 53 90 55	88 56 89 56 92 55	89 63 89 62 91 64	89 65 87 68	90 68 84 63 89 63	92 70 92 65	70 88	65 87 62	87 56 89 54 92 58	78 62 84	72 51 72 47 78 48	74 42 73 41 79 44	42 79	45 78	47 ₁ 76.	40 68	35 68	69	42 65	68	47 75	53, 79	54 74		52.0 79.0
Poplar Bluff	53 84	53 86	55 84	44 78	47 76	46 78 45 82 50	49 85	53 90	56 92	62 91	68 90 69	63 89	65 92 63	70 88 70 90 68	62 90 64	54 92	60 83	47 78	41 79	37 80	44 79 46	38	48 71	29 70	52 71	30 71	44 76 44 82	45 72	49 82	43 77		50.2 81.9
Sikeston	71					50	52 53		60			_	63				62 62				46		43	36	44	38	44 82	54 78 47 75 45 72 47 78 46	53, 79 49 82 52 91 56	44 74 49		52.6 52.9
Cairo, Iil	57 78 62	56 81 63	58 73 61	48 73 57	58 73 56	48 78 58	53 82 61	57 85 67	60 87 66	67 87 70	70 86 72	65 85 70	67 90 71	70 88 75	64 85 69	57 87 64	62 77 61	50 72 54	42 73 51	41 78 54	49 78 57	43 73 52,	38 64 50	66 44	66 48	34 63 43	44 70 49	74 50	56 84 58	73 50		52.9 77.6 58.8
Ozark Plateau							- 1	1								- 1	1		01		"									+		
Arcadia//	77 49	78 50	72 54	42	71	75 41	80 45	86 48	89 55 87 65 85 57 92 59 94 72 88 63 93 58 90 61 91 60	81 63	88 63	85 65 88 86 67 88 63 92 69 85 65 92 68 86 67 86 86 67 86 86 86 86 86 86 86 86 86 86 86 86 86	90 67	88 66	88 57	90 53 89 58 86 62 89 56 90 66	73 58	70 50	76 38	80 36	72 41 73	75 35 71 45 72 42 42 76 43 74 37 75 36 77 39 75 40 74 42 71	63 40	30	64 38 72	66	68	74 45 80	78 47	76 38		77.0 47.4
Aurora	78 55 78	79 60 81	74 51	69 50	56	74 48	81 51 80	48 87 63 82 54 91 53 92 64 88 60 91	65	81 68	86 65	68	68	72	57 84 57 87 69 87 57 91	58 58	57 57	46	74 46 73 44	81 51	54 54	45 70	67 47 64	30 72 43 68	46 59	29 72 48 67 44 70 35 65 30 69 46	34 75 45 73	51	79 61 85	74 48 81		78.0 54.8 77.9
Eldon W	78 55 82	54 78	52 74	44	57	48 75 48 77 48	47	54	57	57	89 62 90 66	67	67	69	69	62	60	59	44 80	43	47	42	49 64	34	40 65	44	44	50	55 78	48 79		52.7 78.6
Farmington	53 80	57	50 72	44	45	48 76	78 50 86	53	59 94	64	66	63	63	71 90	57	56 90	54 74	44	42	43	45 72	43	46 64	39 63	39 65	35 65	37 69	51 74	50	42 74		50.3 78.5
Koshkonong Minimum	51 81	50 81	52 76	42 71	47 70	48 76	62 81	64 88	72 88	69 87	90 70 89 69 90	69 85	68 91	68 88	69 86	66 88 61	62 77	48 75	40 69	51 79	48	37 73	45 65	30 68	42 69	30 69	46 78 51	52 76	82 55 85	40		53.1 •78.7
Lebanon M	56 83	59 77	51 79 52 74 50 72 52 76 54 71 45 75	51 75	53 76	52 76	53 82 52 79	60 91	63 93	68 80	69 90	65 88	67 94	69 88	69 86 62 89 54 90 54 90	61 91	61 75	48 73	42 73 40 69 47 79 34 78 41	51 79 43 85 43 82 51 79 50 87 35 80 48 85 46 85	54 70 47 73 45 72 48 72 56 72 49 75 54 81 52 73 57	49 75	50	34 59 39 63 30 68 40 73 35 74 35 62	48 66	46 71	51 71	77 50 78 51 74 52 76 50 84 53 81	59 81	80	::	55.8 79.9
Mountain Grove 奶 Maximum	49 82	80	45 75	45 76	52 77	52 77	52 79	53 82 50	58 90	62 78	64 88	68 86	61 90	67 90	54 90	52 93	52 82	49 75	34 78	35 80	49 75	36	38 68	34 70	40 70	33 70	71 43 80	53 81	53 85	43		49 0 80.0
Neoslio Minimum Maximum	51 82 51	8.1	8.1	79	81	78 45	44 83 48	87 60	91 61	85	64 88 64 89 66	92	93	91	90	91 52 93 56 92 50 88 60	87 87	74	81	48 85	81	75	65 38 68 44 72 44 68	74	42 72	71 33 70 39 80 45	45 80	48 83	52 82 60	43 84 39		50.7 83.0 51.3
Rolla	78 54 78	78 57	84 45 72 50	72	74	75 51	80 60	90 62	90 63 86	81	90	86	90	90	85 56	88 60	79 55	72	40 75 43 76	85	73 57	74	68	62	42 63 44	69	51 68 50	47 78 49	80 61	78		78.1 53.6
Springfield Maximum Minimum	78 57	53 78 57 75 62	69 51	50 75 44 75 44 74 42 71 51 75 45 76 44 79 46 72 47 71 52	44 73 56 71 57 77 45 71 47 70 53 76 52 77 53 81 56 71 57	76 48 76 52 76 52 77 43 78 45 75 51 73	78 55	85 62	86 66	68 89 57 79 64 86 69 87 68 80 62 78 66 85 68 81 70 75 68	68 86 68	87 68	67 89 68 90 67 91 63 91 68 91 67 94 61 90 66 93 64 90 70 88	66 82 72 39 69 85 71 90 68 88 69 88 67 90 90 71 12 65	49 85 56 85 59	88 65	58 78 57 75 60 74 54 74 62 77 61 75 52 82 55 87 79 55 55	71 46 71 59 75 44 70 48 75 48 73 49 75 53 74 42 72 46 71	76 49	48 81 55	69 54	71 50	44 62 48	38 71 43	64 47	36 70 45	73 54	81 52	79 56	41 75 47		76.4 56.2
Southwest Plain																							1	1		ш			1			
Appleton City Maximum	81 55 83	83 55	50	49	58	76 51	82 55 81	91 59	88 65	68	88 67	83 64	90 71	81 65		89 58	54	46	76 47	86 50	74 52 87	76	65 46	73 42	65 45	69 38	68 50	83 49	78 60	80 43		78.4 53.7
Centerview 5 Maximum	55	64	83 49	83 46	81 55	79 52	54	87 56	91 64	84 66	87 67	62 62	68	69	86 67	58 85 66	88 53 85	76 46	71 47	86 47	87 48 80	78 49	76 47 80	61 46 76	64 40 68	38 68 38	48	48	50	83 48 80		80.5 53.8 82.1
Clinton	85 55 81	63	50 77	59 73	58	51 76	83 55 81	61	94 63 84	69	62	69	70	68	57	70 80	44	50 71	80 40 75 48	53	63 74	76 44 80	48 66	47 68	42 67	38	70 48 70 50 69	50	58 80	46 77		55.1 77.9
Lamar) Maximum) Maximum	55	58	47	47	55	53	54 83	56 90	62	66	87 67 92 62 86 65 89 69	61	91 68 92 70 79 63 91	62	56 86 67 89 57 89 55 90	58 92	50 75	46 76 50 71 47 76	83	50 87	49	45 77	46 66	44 75	37 68	71 38 67 38 79	40 73	49 86	77 50 80 58 80 50 79	45 82		51.8 80.8
Lamonte (Minimum	56 84	56 86	49	46 79 59 73 47 74 48 79 45	81 55 81 58 78 55 79 53 82 54	51 79 52 81 51 76 53 80 51 84 48	52 83	94 61 93 56 90 56 94 62	63 84 62 91 63 92 64	81 69 76 66 77 69 77 68	86	88 62 90 69 86 61 90 70 89 63	61 92 68	65 80 69 81 68 81 62 84 72 81 68	56 89 55	90 70 89 58 92 57 90 59	44 72 50 75 56 78 53	47 78 44	45 65 43	47 86 53 84 50 87 46 87 46	49 71 53 74 51	45 77 41 79 42	42 65 47	41 59	46 62 38	44 73 37	49 71 51	49 76 48 80 50 73 49 86 51 75 50	51 74 50	47 81		53.2 79.8
Marshall Maximum	56	52	52	45	54	48	52	62	64	68	68	63	68	68	55	59	53		43	46	51	42	47	43						42	::	52.4
Nevada Maximum	81	81	72	70	77	78	80	90	88	78 68		89 64	89 69	83	85	87 57	ši	72 45 75	78	86 53 87	80	74	64	73	65	75	69	84	78	81		79.2
Warsaw	54 84 51	82	80	77	77 63 79 57	65 79 45	63 82 49	63 92 59	66 93 62	89	88 68 92 67	64 90 64	92	83 62 84 75	85 58 88 58	57 90 55	54 82 53	75 40	48 78 39	87 45	51 83 55	41 77 37	44 72 44	43 73 40	46 82 37	75 39 72 33	69 51 75 50	48 83 48	78 59 79 57	45 82 47		55.4 82.4 51.9
Northwest Plateau	91	99	49	42	07	40	43	99	02	70	07	04	71	10	38	90	. 00		39				- 1	3						ы		
Chillicothe \$\sqrt{\infty}	85 50	80 59	82 41	76 47	82 44	81 45	84 50	92 57	93 60	72 68	81 62	83 59	91 65	79 65	90 55	86 57	74 47	74 42	76 46	86 47	73 47	79 41	63 41	62 40	64 34	66 29	69 43	59 39 55	72 43	78 44		77.7 48.9
Grant City Maximum	82 55	78 63	70 47	76	79	80 51	82 54	90 57	89 63	81 68	62 81 52	59 82 62	65 86 63 90	80 61	80 58	78 60	71 48	42 72 46 70	46 73 49	47 81 53	47 72 46	41 77 44	41 65 41	64	34 57 35	29 62 35 65	64 39 64	55 45	74 43 75 50	71 47	::	75.1 50.8
Kansas City) Maximum	83 61	82 60	73 53	72 54	79 57 78 47	77 60	83	92 66	89 71	78 68	87 62	81 64 78 59 84 63	90 70	79 64	87 63	84 61	69 53	70 53 70	49 75 53 72 45 80	53 84 55 80	71 50 70	78 55 81	61 50 61	61 51 60	60 44	43	64 49	45 72 54 58	75 50	78 51		76 6 56.8
Kidder Maximum Maximum Minimum Maximum Maximum	82 52 85	81 57 82	44	41	47	79 50 82 53	59 80 52 84	90 53	91 56	74 69	59 59	78 59	70 87 61	75 61 81 68	80 55 89 59	85 50	69 46	70 44 77	45	48	441	44	61 44 68	60 42 59	58 33 64	64 35 70	49 62 38 69 49	58 43 71	71 42 78	78 42 78 45		74.7 48.5 79.7
Lexington	56	64	50		54 54		52	94 62	91 62	80 69	67		_	_		50 89 62		48	48	86 51	86 51	80 48	49	47	39	40	_	51	49	45		53.9
Oregon	85	61 84	46 76	42 75	49 84	53 83	54 85 59	55 94	58 89	69 84	63 85	60 82 60	66	57 83	54 89	58 84	47 77	43 75	51 78	53 87	42 77 45 72 47 76	42 83	44 70	42 69	34 65	34 64	39 70	42 71	40 81	4·1 82		*49.7 80.1
8t. Joseph Maximum	58	63	48	49	53 80	53 83 57 80	59 83	59 90	66 92	71	63 85 62 84 62 79 63	60	66 92 67 91 67 84 68	57 83 57 76 61 85 66	54 89 57 86 60 86	64 81	49 73	43 75 47 72 49 76 43	51 78 53 76 53 74 47	87 55 85 55 76	45 72	48	70 47 59 49 78 41	48 62	65 34 60	39 63	42 66	51 66	76	49 79		53.4 76.6
/ Minimum	57 83	58	51	46 75	51	58 80	60	59 90	68	66	62 79	78 63 86 61	67 84	61 85	60 86	58 85	52 78	49 76	53 74	55 76	47 76	79. 50. 75	49 78	48 62	40 61	37 60	46 67	52 65	46 72 46	49 76	::	53.9 77.2
/ Minimum	53	58	75 49	43	44	48	82 53	56	90 64	67	63	61	68	66	64	58	49	43	47	54	48	46	41	40	36	31	43	44	46	47		51.0

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU. CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MISSOURI SECTION.

GEORGE REEDER, Meteorologist.

Vol. XXXII. COLUMBIA, MO., OCTOBER, 1928. No. 10.

GENERAL SUMMARY.

ter than normal in all parts except the Ozark region, while the sunshine was about normal for all sections. There were not damaging storms, and no frosts until the 20th to the 23d, and month was favorable for and for livestock.

The first part of the month averaged warmer than normal with an outstanding warm spell from the 8th to the 12th, when afternoon temperatures ranged from 90° to 94°. The latter part of the month was normal or mainly cooler than normal, with the first pronounced cool spell about the 20th. The month closed with the second cool snap that brought the first more or less general freeze of the season, although there were about 16 stations at which the temperature did not reach the freezing point.

The distribution of the rainfall was ample for needs, except more in parts of the Ozarks would have favored pastures and there was rather too much in parts of the southeastern counties. There were three or four well spaced rainy spells that left several days of fine weather between. The heaviest and most general rains occurred during the middle of the month, the 16th being the outstanding day in this respect, when 3 to 5 inches fell over most of the southeastern lowlands.

TEMPERATURE.

The monthly mean temperature for the State as shown by the records of 66 stations was 60 9°, or 3.5° above the normal. The highest local mean was 69.3°, at Dean, McDonald County, and the towest was 54.2°, at Tarkio, Atchison County. The highest temperature, 94°, occurred at Oregon on the 8th, Centerview and Dean on the 9th, and Jefferson City on the 12th. The lowest, 22°, occurred at Goodland on the 31st.

PRECIPITATION.

The average precipitation for the State, based upon the reports of 98 stations, was 3.83 inches, or 1.08 inches more than the 56 years' average. It was the fourth consecutive wetter than normal October. The greatest monthly total was 8.97 inches, at Dexter, Stoddard County, and the greatest fall in consecutive 24 hours was 5.23 inches, at Dexter, on the 16th, and the next largest was 4.66 inches, at Greenville, Wayne County on the 16th.

MISCELLANEOUS PHENOMENA.

Fogs.—2d, 3d, 14th, and 27th.
Frost, light.—20th, 23d, 24th, 25th, and 28th.
Frost, heavy.—20th, 23d, 26th, 28th, and 31st.
Frost, killing.—Nearly general on the 31st,
Hail.—Small and unimportant on the 4th, 6th, and 7th.
Halos, lunar.—24th, 25th, 26th, and 29th.
Halos, solar.—6th, 8th, 11th, 25th, 26th, 28th, 29th, 30th, and 31st.
Thunderstorms.—1st, 3d, 4th, 5th, 6th, 7th, 8th, 12th, 15th, 16th, 17th, 21st, 26th and 7th.

OBSERVERS' REMARKS.

CBSERVERS' REMARKS.

Clifton Hill.—First general killing frost on the 29th though the late corn was killed Sept. 25. Light hail on the 7th.

Downing.—Damage of \$150 by wind on the 5th to buildings, fruit and shade trees.

Gorin.—lee formed on night of the 29th.

Kirksville.—Hail on the 7th.

St. Charles.—92 degrees on the 10th was the highest temperature recorded since 1888.

St. Louis University.—Record maximum temperature occurred on the 10th.

Warrenton.—11ail on the 8th.

Morehouse.—First real killing frost on the night of 30th—31st.

Farmington.-A delightful month. On the 31st forest trees were still full of leaves

Farmington.—A delightful month. On the 31st forest trees were still full of leaves and many of them still green.

Hailey.—Hail on the 6th. Killing frost on the 30th.
Lockwood.—A warm October; no killing frost; ample moisture. Wheat up and looks fine; acreage large. Corn good; some gathering.

Salem.—High southeast wind on the 3d. Dense fog on the 14th until 8.30 a. m.
Seymour.—Sleet on the 29th.
Appleton City.—Month cool and changeable; good for outdoor and farm work.
Lamonte.—Corn husking made good progress. Wheat looks good, All farm work well advanced. Have had only light frosts so far.

Nevada.—No killing frost yet. Aurora observed about 4 a. m. of the 23d.
King City.—Hail on the 4th. Heavy fog on the 27th.
Oregon.—Strong wind and dusty on the 10th. Faint aurora on the 18th. Fog in the morning of the 27th.

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

AUG 1	pressure (vel)	Me rela humi	tive	Suns	hine		,	Wind		
-05/TY	an pre evel					1.00	dr-	Ma	x. velo	city
White gove	Mean barometric pi (Sea-leve	7 a. m.	7 p. m.	Total hours	Percentage of possible	Total move- ment miles	Average hourly velocity	Miles per hour	Direction	Date
Columbia	30.06 30.05 30.05 30.04 30.08 30.08 30.11 30.07	83 81 74 78 76 81 84 79	65 58 63 58 56 64 64	238 227 198 210 242 186	69 66 57 61 70 54	4,699 5,149 6,277 5,133 8,074 6,737 4,666 4,546	6.2 6.9 8.4 6.9 10.9 9.1 6.3 6.1	28 32 27 33 37 32 20 25	w. sw. w. nw. s. s. se. sw.	4 4 4 4 8 8 8 22 4

Beginning January 1, 1928 wind velocities are by 3-cup anemometers.

COMPARATIVE DATA FOR OCTOBER.

		Temper	ature			Precipita	ition		Nur	nber	of d	lays
Year	Mean	Departure	Highest	Lowest	Mean	Departure	Greatest in 24 hours	Total snowfall, unmelted	With .01 inch or more	Clear	Partly cloudy	Cloudy
1888 1889 1890 1891 1892 1893 1894 1895 1895 1897 1896 1897 1898 1900 1901 1902 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926	53.6 53.8 54.8 55.7 5 55.7 6 55.7 6 62.4 62.4 62.4 62.4 62.4 62.4 65.5 56.3 57.2 56.9 15.4 56.9 15.4 56.9 15.8 60.6 65.4 4.8 66.9 66.9 66.9 66.9	-3.5 -3.3 -2.3 -1.4 +0.6 -0.4 +0.5 -5.9 +5.3 +5.3 +5.3 +5.3 +1.4 +0.5 -2.0 +0.1 +0.1 +0.1 +0.1 +2.3 +0.1 +2.3 +0.1 +2.3 +0.1 +2.3 +0.1 +2.4 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.5 +0.1 +0.1 +0.1 +0.1 +0.2 +0.1 +0.1 +0.1 +0.1 +0.1 +0.1 +0.1 +0.1	89 91 91 91 95 95 95 94 89 90 99 94 96 96 96 96 96 97 98 88 88 95 95 96 96 97 98 98 99 99 99 99 99 99 99 99 99 99 99	244 227 222 19 166 168 188 155 23 199 224 225 224 228 219 199 200 122 222 220 221 221 221 221 222 223 231 244 245 255 211 211 212 224 225 237 247 247 257 267 277 277 277 277 277 277 277 277 27	2.65 2.250 2.224 0.99 4.18 2.28 2.48 2.93 4.18 2.52 2.93 4.18 2.52 2.90 2.90 2.77 2.90 2.19 3.30 3.83 4.16 4.25 2.27 2.90 3.37 6.74 2.19 6.71 3.37 6.74 6.74 6.74 6.74 6.74 6.74 6.74 6.7	+0.21 +0.06 -0.20 -1.33 -0.16 -1.45 +0.70 -2.09 +0.04 +1.73 +1.79 -0.50 +0.08 +0.41 -1.54 +2.20 +0.33 +0.41 -1.57 +0.30 +0.33 +0.41 -1.49 +2.04 -1.49 +2.04 -1.49 +2.04 -1.49 +2.10 -1.49 +1.149 +2.14 -1.49 +1.149 +2.14 -1.49 +1.149 +1	2.40 2.81 1.20 2.68 1.70 2.53 4.04 4.51 2.53 3.46 4.51 2.57 5.12 2.57 5.12 2.80 5.10 5.12 2.80 5.10 5.12 2.80 5.10 5.10 5.10 5.10 5.10 5.10 5.10 5.1	0 0	7663500625388576558350755658697866671175559410958		78866667678567565547566555867655558658	

	Climatological Data for Temperature, in degrees Fahr.																			
					Temper	ature,	ln deg	rees Fa	hr.		Precl	pitation	, lu lu	ches.	Numb	er o	f day	ys.	non	
Stations.	Counties.	Elevation, feet.	Length of record, years.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest dally range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall.	With precip.,	Clear.	Partly cloudy.	Cloudy.	Prevailing direction of wind.	Observers.
Northeast Plain Brunswick Clifton Hill Columbia Downing Fayette Fulton Gorln Hannibal Jefferson City Kirksville Louisiana Macon Mexico Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Unionville Warrenton Keokuk, lowa. Section means and	Chariton. Randolph Boone Schuyler Howard Callaway Scotland Marion Cole Adair Pike Macon Audrain Monroe St. Charles St. Louis Cityde Shelby Lewis Phtman Wurren Lee, Ia	652 731 784 876 661 818 700 534 557 969 469 875 800 748 456 568 779 650 1,062 816 614	48 28 37 6 47 39 40 35 39 38 6 39 53 15 34 29 34 45 55 55	59.9 59.3 60.8 57.3° 59.1 61.3 60.2 63.6 60.0 58.5 59.2 61.7 62.2 61.7 59.8 61.6 58.0 61.6 58.0	+ 4.7 + 2.1 + 4.2 + 2.4 + 3.6 + 4.2 + 6.9 + 3.5 + 3.7 + 1.7 + 2.8 + 1.5 + 2.6 6 + 6.0 + 3.1 5	91 89 89 88 91 90 89 94 87 90 89 92 88 88 88 91 94	12 8 10 12 9 11 10 12 8† 10† 10† 10† 11 12 12 12 12 11 10† 11 11 11 11 11 11 11 11 11 11 11 11 11	31 28 34 26 25 26 23 28 28 28 26 27 30 37 37 37 27 23 31 31	31 29 29 31 31 31 31 29 29 30† 29 30† 29 31 29 30†	35 35 33 40 43 37 32 46 38 40 37 27 26 36 36 32 28 46	3.04 3.17 2.86 5.23 3.11 2.79 1.79 5.26 3.97 1.79 4.53 4.53 4.53 4.53 4.44 2.39 4.40 2.24 2.39 5.26 5.26 3.77 3.44 3.42 2.39 4.50 3.30 3.41 3.42 3.42 3.42 3.44 3.42 3.42 3.44 3.42 3.44 3.42 3.44 3.44	+0.31 +1.05 +0.44 +3.03 +0.63 +0.04 +2.88 +2.33 -0.80 +1.12 +1.12 +1.90 +1.85 -0.48 -1.40 +1.65 +1.65 +1.66	1.10 1.08 0.73 1.20 0.97 1.06 1.29 0.90 0.80 1.07 0.75 0.90 0.67 1.09 0.90 0.90	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	11 1 1 1 1 1 1 1 1 1	66955° .88946611 .0055511 .0033330	75 66° 97 77 11 13 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	8 7 7° 4 1.5 10 1 13 5 5 111 9 6 6 9 9 9 10 6 14 6 13	se. w. se. s. s. s. s. se. sw. se. s.	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Bureau James Taylor J. D. Settle Chamber of Commerce J. W. Pulliam H. S. Weather Bureau Mrs. Frank Kilegel Prof. J. S. Stokes Stark Bros. Nurseries W. C. Brown Mrs. Abble Snoddy J. S. Conway L. C. Saeger H. S. Weather Bureau St. Louis University J. G. Jewett Frank Hall Geo. W. Dayls Prof. A. W. Ebelling U. S. Weather Bureau
Southeast Lowlands Campbell Caruthersville Doniphan Jackson Marhle Hill Morehouse Poplar Binff Sikeston Cairo, Ill. Section means and	Dunklin Pemiscot Ripley Cape (firardean Bollinger New Madrid Butler Scott. Alexander, III extremes	314 265 344 428 470 289 339 318 358	2 31 23 36 32 26 23 22 52	62.8 64.9 62.3 60.4 62.2 62.8 63.4 63.4 62.8	+ 3.2 + 3.9 + 2.4 + 4.2 + 2.5 + 4.6 + 3.0 + 3.4	91 91 87 87 91 89 92 88 92	10 10 10 10 13 9† 13 10 13	34 39 28 26 26 29 29 38 26	20 29† 31 31 31 31 31 31 31 31	42 30 40 39 42 40 42 29 42	8.41 7.18 6.16 6.32 7.85 7.13 5.70 6.04 5.13 6.66	+4.22 +3.11 +3.10 +5.20 +4.53 +2.50 +3.44 +2.37 +3.56	3.00 2.05 2.57 3.36 4.50 2.72 1.90 2.20 1.59 5.23	0 0 0 0 0 0 0 0 0 0	8 1 5 1 7 7 7 1 8 1 10 2 9 1 8 1	8 7 1 8 4 8 2 5 3	5 1 8 9 9 9 2 6 1 8 1	8	s. n. sw. s. s. sw. s.	Jeff. King Sam Smith W.W. Martin John G. Putz R. A. DeWitt John A. Spence J. H. Wotpers Glen R. Fisher U. S. Weather Bureau
Ozark Plateau Arcadia Aurora Birchtree (near) Bolivar Dean †† Eldon Furmington Good land Greenville Hailey Koshkonong Lebanon Lockwood Mountain Grove(near) Rolla Salem(near) Seligman Seymour (near) Springfield	lron Lawrence Shannon Polk McDonald Miller St. Francois Iron Wayne Barry Oregou Laclede Dade Wright Newton Phelps Dent Barry Webster	926 1, 379 1,000 1,071 1,071 1,000 934 918 1,000 958 1,265 1,078 1,463 1,463 1,173 1,542 1,173 1,542 1,612	46 37 32 33 30 31 16 33 5 2 26 39 21 26 39 27 23 25 21	59.1 62.2 61.6 69.3 61.4 59.6 60.8 61.4 62.7 61.3 63.4 61.4 62.7 62.4 62.7 62.1 62.1	+ 3.0 + 3.7 + 3.4 + 3.6 + 5.0 + 3.8 + 2.4 + 3.4 + 4.1 + 3.7 + 4.2 + 5.9 + 2.6	87 84 89 94 91 89 90 91 86 90 90 90 90 91 89 90 90 90 90 91 89 90 90 90 90 90 90 90 90 90 90 90 90 90	13 4† 13 9 10† 10 13 12 10† 10 10 13 9 10 10 13 9 10 10 13 12 	24 33 28 29 28 25 22 25 32 29 33 30 29 27 26 32 27 26 32 27 26 27 27 28 27 27 28 27 28 27 27 28 27 27 28 27 27 27 27 27 27 27 27 27 27 27 27 27	31 31 30 24 31 31 31 31 31 31 31 23 31 31 31 31 31 31 31 31 31 31 31 31 31	42 33 41 44 40 42 42 42 42 42 42 41 42 44 41 42 43 39 44 41 43 31 41 41 41 41 41 41 41 41 41 41 41 41 41	3.34 3.08 3.93 2.86 2.83 1.39 2.42 3.49 1.92 3.92 1.92 3.25 3.35 4.70 2.10 1.69 2.91	+0.27 -0.19 +1.35 -0.45 -0.66 -1.61 -0.47 +0.27 +1.01 -1.30 -0.20 +0.30 -1.11 -0.84 -1.40 -1.11 -0.42	0.88 1.10 1.05 0.65 1.38 1.51 4.66 0.90 0.85 0.76 1.53 1.17 0.65 0.89 0.82 0.65	000000000000000000000000000000000000000	7 2 2 3 4 2 3 4 4 2 3 5 5 5 6 10 4 4 8 6 6 11 11 11	00 4 1 1 1 1 1 5 6 6 1 1 5 5 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 3 9 6 3 7 7 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	11 7 6 3 4 6 3 9 9 5 9 7 9 2 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	s. se. s. sw. sw. s. s. se. se. se. sw. sw. se. s. sw. se. se. se. sw. s.	Arcadla College W. T. Troughton V. H. Kirkendall Southwest Baptist College H. E. Dean E. H. Shepherd Robert Forsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lou Mulcare C. S. Crow Mo. Fruit Exp. Sta. U. S. Fisheries Sta. F. H. Lane A. C. Leech Floyd E. Fawver Im H. Hailey U. S. Weather Burean
Southwest Plain Appleton City Centerview Clinton Harrisonville Launar Launar Launar Marshall Nevudatt Warsaw Section means and	Johnson Henry Cass. Barlon Pettis	687	40 34 50 40 26 38	62.2 58.2 [†] 64.3 60.0 62.6 63.2 62.6 64.2 62.2	+ 3.1 + 0.1 + 5.7 + 4.0 + 3.7 + 5.2 	89 94 93 93 90 93 89 92 94	8† 9 9 8 9 81 •9	32 32 36 33 35 32 35 28 28	31 31 29t 31 23 23 23 23t 31 31	38 42 35 38 38 39 36 42 42	3.11 2.47 3.16 3.05 3.45 2.68 2.75 3.56 3.03	+0.77 -0.08 +0.35 +0.46 +0.32 +0.35 -0.33 +0.25 +0.26	1.10 1.50 1.28 1.45 1.40 1.35 1.58 1.58	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 6 4 9 7	1 1 8 2 1 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 6	1 6 15 9 3 9 8	sw. nw. sw. n. se. sw.	W. G. Bigelow E. A. Markey A. E. Derwent, M. D. John H. Patterson Jesse A. Mann J. E. Wheeler Dr. W. H. Black Georgo A. Kaupp Everett Martin
	Livingston Nodaway Plalte Worth Jackson Caldwell Centry Lafayette Nodaway Holt Brachanan Atchison	980 856 1,131 963 1,020 1,095 688 1,169 1,048 967 916 822	18 38 7 23 38 34 2 42 42 771 19 24 31	57.9 58.8 58.0 59.6° 57.3 60.8 55.7° 62.2 56.4 60.2 59.0 54.2 58.4 58.7 60.9	+ 1.9 + 3.1	90 93 90 92 90 91 90 91 90 89 91 91 90 87 90 94	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	27 26 29 26 29 36 29 33 30 34 32 28 26 22	29 31 29 31 29 29 31 29 31 29 31 29 31 31	37 43 36 42 36 31 38 31 36 37 31 35 35 48	5.85 3 18 4.54 0.79 5.26 2.64 3.61 5.80 4.51 2.97 2.12 3.51 2.09 4.10 3.61 3.83	+3.64 -0.27 +2.09 -1.46 +2.5! -0.28 +0.99 +1.94 +0.30 -0.44 +0.84 -0.48 +1.54 +1.54	2.35 1.18 1.70 0.25 2.24 0.81 1.61 0.62 0.65 1.09 0.58 0.89 2.35 5.23	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7 9 4 11 10 9 10 8 8 8 11 7	16 11 12 14 10 10 12 17 16 15 14 14	6 12 9 11 12 7 11 9 8	11 9 8 10 6 9 12 7 4 7 9 10 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	se. e. nw. n. sw. s. s. sw. se. sw. se. se. s. se. s.	M. H. Moulton Win. J. Olenhouse Fr. Adelhelm Hess Fred L. Stiff W. P. Spillman U. S. Weather Bureau Linn Terry H. L. Yates Miss Carrie Loomis J. R. Brink Mina Wright H. S. Weather Bureau Albert Volker W. 41. Estes
										1			1					1		

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

Reference letters *, b, c, appearing in the table indicate number of days missing; for example, b, represents two days, etc.

† Also on other dates. †† Received too late to be included in means and summaries. ‡‡ Post-office address of bean is Anderson.

Daily Precipitation for October, 1928

Sations		Daily Precipitation for October, 1928 Day of month.																																
Norther February																D	ay o	f mo	nth															al.
Second Hold Charleston 1	Stations.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	'20	21	22	23	24	25	26	27	28	29	30	31	Tot
Second Hold Charleston 1				1	1	1 - 1				1											1					<u>.</u>				-	[· ·		
Common	Boonvilled				2				07								05		.34	.02				.93	.05									2.85
Second S	Clifton Hill	Chariton	.33	3 .06	5	.25	.27		20	26	1				Ť.	.02 T	.45	.24	.23					1.08				.04		T.				3.17
Section	Downing	Mississippl			.01	.08	.16		.05						.10		1.20	.08	.56				.48	1.05				.27	.85	5			.42	5.23
Selegon 1911	Fulton	do Mississippi	.03	. 19	3	68	1.06			.40	.04	1			.36		71	.01	.34		3		.36	.66					.07		Į			5,26
Scheen	Hamibal***	Missouri		.33	3		.80			.40					Т.			.40		. 60				.10			• • • •		.08					2.63
Name Charles	Kirksville	Mississippi					.16		.35	1.00				.35	.37		.55	.12	.68	.20			.08	1.08				.11	.04					3.85
Second	Mncon II	Chariton		.50)		.85			. 64							.02			95				1 11	OF		••••	.03	.16	3				4,58
Second	Milmuli	Grand Mississippi	.41				.25								.30	.40	.10		.23		1.20		.75	1.25				.06	.24					3.50 3.44
Schemer	Pacific	Meramee Missouri	Ť.	.18		18	.49				.02						.02	.98	T.	.30				.12	.06				T.					3.42
Self-gray	St. Lonis (2)*	do	.07						,	67							.01	.31	.26				т.	. 13					.05	j				2.39
Southerst Dominate Samplest II	Steffenville	do		j		.85	.73		Ť.	.70				T.	.35		.30	.30	.45	.12			T.	.95					.52	2				5.22
Southerst Dominate Samplest II	Unionville	Chariton	T.				.20		Ť	1 13					.30	.io	.65	.50 T.	1.05	T.			.10	1.10				.25	.75	5				5.00
Campbelli S. Francis			T.			1.65				.70				T.	.37		1.33	.01	.11	T.			.28	.51	• • • •		••••	.95	T.				••••	
Cape Clare Cape Clare Cape Clare Cape Cape Cape Cape Cape Cape Cape Cap	Campbell!!	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$																																
Incheson Mississelmin 22 38 51	Carnthersville	do .	1	13	2.1.86	.28											1.53	2,05						.78				••••	.58	3	.03	3		7.18
Startle	Doniphan	Black		Ť,	1.66													2.57							.65.		••••		1.50		.25	i		6.16
See Shifted	Marble Hill	Mississippi			90	,20							.1				50	4.50	.30				••••						.55	5				7.85
Silesdon	Poplar Bluft	do			.06	1.35	.26										.10	1.64	2.20	.26				.10	.52				.22	.35	.05	.03		7.14 5.70
Arrenta ii	Sikeston#	Mississippi			11	1.00	.45			T.							.16 .67	2.20	1.42	.05					.60			.05			Ť.			
Aurers (mar) Neosho T 07 07 1.10 10 T 1.00 3.50 2.20 3.40 3.50	Ozark Plateau	/// //				, a					١.			10				0.1		0.00				10					4.0					0.04
Bolivar. Osage. T. T. T. T. 55 25 06 T. 26 27 28 56 56 50 2.86	Aurora	Neosho	T.		7		1.10			i.id							T.	1.00						.12			• • • •		.46	2				3.08
Elfourill St. Francis	Bolivar	Osage	T'.	T.	4c	7		,55	.25	.05					· · · · ·			.62	31	.25											.50			2.86
Farmington St. Francis G3, 16 O 10 T. 1.38 32 T. 07 27 27 4.24	Dean Eldou	Neosho			1		.65	Ť.	.63	.09									1.25						.30									2.83
Galemail	Farmington	St. Francis		.0:	3 .16		.09	.15		1.10								1.03	.94					.36				.30	.47	7 .20			• • • •	4.85
Halley	Galemi	Bluck		1	47	7												$\frac{.32}{1.51}$.38				 	.20					.30	0	.01			3.49
Number Color Col	Hailey	White		3	4	1	1	.90															.10					.40			.12	2	.40	1.92
Second Converse	Lebanon	Osage	10	Ţ.	.56	5					Ť.	\.;						7°.	T 53	.38	Ť.		1.3		.32	T.	• • • •		19	.38		.32		1.96
Salem (near) do	Mountain Groves	Neosho	0.0	08 5 .18	5 I.a.	Ť.	.95	11.	.68			1												.30		• • • •			.11		.11	1		3.35
Segment Newshor 25	Owensville II	meranice									T.	.					27	T.	.42	.12	• • • • •		• • • •						10					1.29
Southwest Plain Osage	Salem (near)																.35	.68	.24					.16			•••		.22	Т.	T.			2.10
Southwest Plain Osage	Springfield ***	Whitedo	.08	3	Τ̈́.	.45	,23		Т.	Ť.	· · · ·		::::	T.	т.		.07	.34	.69				T.	.16			• • • •	.02	.27	Ť.	.07			1.69
Southwest Plain Osage	Stover					09	1.00										T.	1.56	.11	.82				1.28					10		Ť.			4.49
Appleton City	Willow Sprgs. (near)	White								.02	2						• • • •	.72	.49	.24			••••	.25	ï.ii	• • • •			.06	3	.10			
Centerview Missouri	Appleton City	Osage	T.			41	. 62	T.	T.	.02	2						T.	.61	.34				T.	1.10					T.		.01			
Harrisonville Osage.	Clinton .	Missouri	T.			$\frac{.12}{.80}$				(::.							.03	.20	.20	::::				$\frac{1.50}{1.28}$.08		••••	3.16
Lamonte Missouri 02 35 02 56 16 68 10 1.35 T. 2.68	Harrisonville	Osage						1		.04								.81	.75					1.45		1		10			1			3.05
Nevidua	Lamar 11	Missouri	.02	2		35	.10	.02	.10	30.					1		:::	.16	68	.07			.10	1.40					.18 T.		.10			3.45
Warship	Murshall Nevndn	Osngo	175				• • • •	175	08		•••						• • •		1.00	.02	•		.08	1.60	• • • •		• • • •	.02	108				••••	2.75
Northwest Plateau	Osecola ill	L					. 52			1.05	5							.28	.21					1.40							1.08	5		2.86 3.56
Albuny	Waverly II	Missouri	••••	.20	b	1	.64	••••	.10	T.					.06	T.	.07	.80	.15	.11	1			1.60	.11	••••		••••	.06				••••	3.96
Gallatin Grand	Albuny	Orand	ý:										j.	1 50		.70		. 35	1.66	.59		25		.67			95		1.04					
Gallatin Grand	Conception	do	T.			Τ.	.28							33	.09) T.	.96 .05 T.	1.18	ή· 1.70		.75		.20	.74			. 20		100			T.	.07	3.18 4.54
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Gallatin	do				.16	.08								.25	3	.13	.68	1.78	.39			.25	.26				7.	T.					0.79 3.80
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Kansas City***	do Missouri	T.	2		T.		.05						.38	.74	.03	.04	.55	2.24				.40	.21				.55					.22	5.26 2.64
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Kidder # King City	Grand Missonri				.33	.04							1.10	1.22	.07	.02	.34	1.65 2.30	.56			.67	.44	• • • • •				. 13				.05	5.80
St. Josephess do 1, 12 35 1,04 08 ,01 09 ,56 ,33 73 T 17 3.51 Tarkio do T 10 10 36 ,58 38 27 30 2.09 Trenton Grand T 28 07 ,22 ,25 ,50 ,41 ,89 28 ,65 18 ,37 4.10	Maryville II																																	2.97
Trentou. Grand T	St. Joseph*** Tarkio	do	T.	,		.12		.35						1.04	.08	.01	.09	.56	.33				.73	T' 38				.03		T			.17	3.51
	Trenton	Grand	T.				.28							.07	.22	.25	.50	.41	.89				.28	.65			••••	.18	.37					
								1																					18			1		
				1									1														13							

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation.

***Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular U.S. Weather Enreau station; precipitation is for 24-hour period, midnight to midnight.

***Precipitation in the next following measurement; separate dates of fall not recorded.

***Precipitation is for 24-hour period midnight.

	уТ	em	era	tur	es f	or (Octo	ber	, 18	28																						
Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31 8	Mesn	
Northeast Plain	-	Po	0.5			00	Pu	00	00		00	6.1	CO		PC	Po									1	1			j			
Brunswick \$5 Maximum	72 49	78 49	81 52	87 60	76 50	82 53	78 55	90 55	88 53	90 55	88 66	91 67	53 53	75 54	78 59	79 65	64 59	71 50	57 41	72 38	76 42 76	56 42	69 35	70 40	63	63 39 61	53	50 37 51	47 32	52 32 50	60 31	71.5 48.3 70.8
Columbia Maximum	61 56	75 53	79 62	87 64	75 51	79 55	80 59	88 66	84 55	89 65	87 67	88 69	72 55	76 55	80 65	79 65	72 52	70 49	57 42	68 37	76 54 76	42 57 39 65	67 34	68 37 72	59 39	61 43	56 40	51 38	46 35	50 38	57 35	50.8
Fayette	65 43 65	80 48 76	80 48	89 55	79 45	83 45	81 51	90 56	91 48	90 50	88 60	88 63	69 54	77 54	82 56	80 62	73 57 73	49 72 48 67	61 39	31	76°	40	71 30	34	65 34 59	36	63	53 33	49 31 45	38 53 33 47 36	61 25	73.6
Hannibal Maximum Minimum	56 85	50 77	78 56 87	85 62 89	77 53	83 52 88	78 58	88 63 93	85 57 93	89 65 93	86 69 92	88 70	76 55 89	75 55 85	79 64 85	80 65 87	51 84	49 81	54 41 70	68 37 71 31 65 37 73 31	34 75 53	58 39 70 45	68 36	67 39 70	37 70	43 65 36 55 35 67 39 51 35	52 41 60	38 53 33 48 36 54 34	33 52	36 54	58 33	70.3 50.0
Jefferson City \$\(\lambda \ldots \right) \) Maximum Kirksville \) Maximum	58 72	53 76	53 78	60 86	79 52 76	51 80	90 52 76	59 87	61 86	61 87	62 85	94 65 86	61 77	56	61	64 76	62 65	51	45 61	31 68	82 36 70	45 63	67 33 69	33 67	40 62	39	45 53	34	36	36	61 28	78.1
Minimum	42 66	44	51 78	61 83	58 78 55	53 80	38 80	61 85	55 85	64	66 88	67 90	48 82	52 86	72 56 75	62 80	52	67 47 70	39 60	36 65 33	48 72 46	40	35 65	39 68	37 65	35,	55 40 58	49 33 55 36	46 28 50	48 32 48	53 30 58	69.8 46.7
Louisiana	52 65	46 76	45 77	56 37	55	48	56 78	62 86	54 86	58	65 87	64 89	42 62	55	55 79	66	52 78 62 65	52 67	45 56	33 69	46	48 53	32, 72 35,	48	33 67	28 56 35	40' 51	36	28 47	38 48	26 58	72.5 47.5 69.9
Mexicoss Maximum	48 62	45	47 81	58 87	76 48	79 50 84	53 79	61 87	53 87	89 55 89	65 87	68 89	52 65	53 73 55	58 80	78 62 80	60 75	48 69	40 59	39	72 41	41 47	35 ₆₈	45 68	47 61	35 60	40	51 34 51 35 52	27 47	30° 49	29 60	47.1
St. Louis(1)	44 66	48 79	50 72	60	77 49 75	50	52 84	54 80	54 85	60	63 86	65	58 80	55	59 76	65	62 74	50 68	42 59	68 37 66	73 41 71	43	34 67	37 68	37 61	36 60	41 62	35	30 49	32 48	32 59	47.6 70.8
Unionville Maximum	52 70	54	62	65	75 58 78	83 57 80	60	60 88 60	67 85	87 63 88	65 84	88 66	63	77 58	65 70	73 65 70	58 66	54 65	48	45	50	45 62	40 65	47 65	49 58	43	48,	40 50	37 45	38 50	38 56	53.5 69.6
Warrenton	52 69	40	56 81	60	78 54 78	52	77 47 87	60 84	52 87	88 64 91	64 88	88 54 91	46 81	72 50 75 57	60 78	62	50 77 62	46	38 66	45 70 35 68	72 50 74	40 66	34 66	48	35 63	34 61 39	40	33 53	23	32	30 61	46.5
Minimum	52	52	60	63	78 52	5 3	57	59	59	60	64	64	62	57	63	78 66	62	72 51	44	38	50	45	34	42	39	39	47	36	32	45 35	31	50.6
Southeast Lowlands Campbell	84	78	70	82	81	81	85	87	87	91	87	86	90	87	75	77	78	73	71	68	73	65	66	69	68	70	74	67	59	55	62	75.8
Caruthersville Minimum	42 83	60	62 71	64 83	65 81	48 81	48 83	49 86	61	54 91	56 87	59 87	58	62	64 75	77 62 77 64	78 61 75	50 72	44 72	34 66	73 42 72	48 64	36 65	38 70	41 68	40 68	48 69	64	38	34. 51	36 57	49.8 74.6
Doniphan	53 82	66 78	65 80	66 83	66 78	55 80	56 82 53	57 85	88 65 85	62 87	66 85	59 87 66 85 59 83	90 65 87 58	88 67 83	68 80	76	64 75	50 72 52 70	51 68	45 65	72 51 69	51 66	40 66	45 67	44 70	46 65	54 75	42 69	39 69	42 68	39 58	55.2 75.4
Jackson	42 77 40	58 76	62 76	62	66 78 55 78 61 82 60	46 81	81	57 81	62 80	53 87	58 80	59 83	84	62 81 57	60 78	60 74 62	63 71	54 65	44 65	36 65	46	42 70	32 62	36 60 35	38 63	38 62	50 69	42 69 39 62	36 52	36, 55.	28 61	49.2 71.9
Poplar Bluff	82	80	59 70	63 83	61 82	43 86	46 85	52 81	61 89 61	48 89	60 85	63 87	59 88 60	87	64 75 66	62 73 64	60 77	48 75	45 71	54 68	44 77 44	46 61	34 67	35 73	35 70	38 66	49 77	66	37 51	33. 51	26 61	48.8 75.3
Sikeston	42 83	59 81	61 70	78 63 83 67 82 66	60 80	46 82	51 85	65 87 55	61 88	52 90	57 87	63 87 57 89	92	58 86	80	64 80 64	63 77	48 75 49 77 50	44 73	39 68	44 72 45	50 70 56	36 70	73 39 70	37 69	38 65	48 73	40 65	40 60	34 54	29 50	50.2 76.0
Cairo, Ill	41 79	61 79	63 70	81	80 65 79 61	46 81	50 81	81.	88 63 85 65	53 88 59	65 85	63 85	61 88	61 84	65 74	75	63 74	70	46 66	38 64	69	63	37 62	38 67	38 61	38 62	46 68	40 55	39 49	34 52 38	29 59	$\frac{50.9}{72.1}$
(Minimum	52	62	66	68	61	55	58	59	65	59	68	68	66	62	68	65	59	53	50	45	50	48	42	46	44	45	53	44	40	38	38	54.7
Arcadiass	69	82	71	80	80	80	79	83	81	86	83	85	87	81	78	72 64	74	73 52	62	66	68	57	72	68	62	60	67	55	49 37	55	57	71.8
Aurora	40 74	78	79	62 84	57 80	41 78	45 78	52 82	61 83 63	49 84	54 82	61 84	63 82	58 81	59 82	64 78 60	61 67	69]	42 61	32 69	34 65	49 66	30 69	33 66	35 69	60 32 69	36 66	55 37 60	51	33 50	24 56	46.4 72.3
Birchtree Maximum	53 77	55 80	69	83	50 89 55	59 82	60 80	64 86	85	63 87 61	82 62 85	64 86	64 89	64 83	64 79	60 71 61	54 73 55	45 70 50	43 60	39 60 55 73 35 69	51 68	41 60	39 71	66 39 61	43 64	47 64	54 71	41 60	37 48 37	37 54	33 59	52.0 72.4
Eldon M	48 68	80	83	90	83	85	56 87	60 90	60 80	91	59 88	60 91	60 84 60	60 82 56	63 86	85	55 75	50 62	44 75 35	55 73	68 53 72 35 66	44 55	30 71	35 72 33	64 37 72 36	45 65	54 60	41 55 37 57	51	28 57	44 68	50.9 75.4
Farmlugton Minimum	42 82	85	72	80	50 81	87	53 87	58 86	80 57 87 63	60 89 63	62 87	63 86	87	85	56 79	63 71 63 72 62	75 62 72 58	62 42 72 52	64	35 69	35 66	45 61	33 71	68	60	40 62	41 64 50	37 57,	37 51 37	28 57 35 54 33 51	28 62	47.2 73.7
Koshkonong Minimum Maximum	46	79	53 73	64 82	56 79 56	45 79 53	48 82	58 85	63 79 65	63 86 60	60 81	86 67 83	87 64 86	56 83	57 79 65	63 72	58 75 61	69	43 65	33	45 68 47 71 33 65	44 62	33 68	42 67	33 67 43 69 30	38 68	73	38 59	37 47 36	51	25 57	49.1 572.6
Lebanon Maximum	72 43 75	46 83 52	73 62 85	63 82 55	88 55	85	59 85	62 85	87 55	90	63 89	64 86 62 85 61	64 89	63 86	84	85 85	85	49 74	65 46 72	61	71	45 67 33	35 50	44 69 30	69	41 66 36	73 53 57	63	54	35 51	53	⁶ 52.3 74.9
Mountain Grove \\ \Maximum	75	80	76	85	86	82	53 79	55 86	86	90 57 85	63 82	85 85	89 62 90	62 82	84 57 77 63	85 61 78 59	61 75	59 73	64	39 67	65	49	41 71	71 36	74	67	36 70	43 62 37	31 47 35	34 55	29 60	47.8 73.7
Neosho	50 81	84	80	89	50 86	84	58 87	61 84	62 90	60 87	60 84 63	86 65	63 85	61 89 57	83	81	58 75	45 73 42	67	67 34 75 35 68	40 69 50	44 65	30 72 30	74 33	74 38 75 37	39 74	45 70	62	64	33 58 37	32 62	48.9 77.3 49.4
Rolla	53 68 57	82	80	87	46 81 57	48 85 51	58 85 57	63 89 64	59 89	60 91	89 66	90 66	59 85 65	82 59	61 81	61 80	51 76	69	38 68 45	68 36	71 45 65	42 63	69 30	66	62	44 62 35 67	52 60 34	40 58 36	38 48 35,	49	29 58	73.9 49.7
Springfield	73	79	79	84 64	82 53	80	76 62	84 68	61 84	59 85 67	82 66	86	83 66	81	80	62 79 61	58 68	57 70	58 45	68 41	65	39 57 42	69 38	34 68	66 47	67 48	65 46	54 41	46 37	32 52 36	27 56 36	71.8 53 6
Southwest Plain	0,	99	00	64	90	59	02	00	67	07	00	07	00	65	07	61	52	46	40	31	53	42	90	46	4,	30	40	41	31	30	30	55 0
Appleton City Maximum	74 62	79 51	85 59	86	81 47	80 55	78 57	89 65	88 60	89 64	86 65	88 68	79 55	85 55	84 66	77 61	70 56	73	64 41	73	72	58	72	71 37 70	64	69	65	51 3×	47	53	58 32	73.8 50.7
Centerview		80 49	85	63 78 50	89 47	85 55										94	84	42 76 50	74 48	72 38	72 55 78 55 74 50	42 65 41	34 69 36	70	43 68 42	44 67 42	44 65 40	38 52 35 55	47 37 48 34 50 36	53 37 52 37 63 38 55 55	32 61 32	172.0
Clinton	80 58	82 58	56 85 60	90	80	82	85 58	90 60	93 59	91 66	88 68	91 70	84 57	88 55	84 66	53 80 62	84 52 75 60	73 45	66	73 38	74 50	60	71	42 72 40	42 65 43	42 68 44	70 46	55 40	50 36	63	32 62 36	144.5 76.5 52.1
Harrisonville)) Maximum	58 79 47	77	83 48	85	83	77 48	81 56	93 56	59 88 60	89 62	87 63	88 64	69	84 51	78 54	78 60	64 54	73 45 75 40 74	62 37	71 38	74 40 67	42 60 40	73 35	40 73 36	43 61 38	68 41	62 • 42	51 36	44 35	55 35	56 33	73.2 46.8
Lamar W Maximum	84 48	79	48 84 54	86	85	48 85 48	82 59	83 61	90 63	89	86	88 66	50 85 58	87	84	80 63	66 57 71 53	74	46 62 37 61 42 59 40	37 72 38 73 38 71 38 75 38 75 36	67 40	40 57 43	73 35	36 72 37	38 65 37 65 39 67	70 44	67 50,	40 51 36 55 41 51 36	45 39	55	60]	74.8 50.3
Lamoute	69 57	81	85	91	83 45	48 81 54	86 5 4	93 68	92	66 92 64	64 93 65	92 68	92	58 93 66	90 59	81 54	71 53	44 75 44	59 40	75 36	76 54	43 61 40	$\frac{70}{32}$	71 37	65 39	67	61	5 1 36	50 37	56 37	62 33	76.5 49.8
Marshall			٠.															76	63 38 63	74 32 73 38	80	40 78 42 59	71 39 73 35 73 35 70 32 71 32 71 35	72 37	67 41 64	42 65 39 70	56 42 68	52 36 55	44 35 45 39 50 37 49 36	39 56 37 56 37 53 37 55 38	63 29	
Nevada) Maximum Minimum	84	79 50	83	64	46	81 55	79 58 87 55	87 67	60	88 65	85 64	82 67	79 55	86 55	83 65 85	78 62	70 54	49 73 44 77 46	63 41	73 38	48 71 56	59 42	71 35	70 36	43	70 46 69	68	55 39	49 38	53 37	29 59 35	74.2 51.1
Warsaw Maximum Minimum	77 59	82	87	91	83 47	86	87 55	90 68	92	92	85 64 88 67	92 70	79 55 87 59	88 57	85 68	80 63	76 58	77 46	41 75 45	74 34	78 58	42 68 45	74 32	70 34	70 36	69 44	46 67 47	39 55 37	49 38 50 38	55 38	61 28	77.6 50.7
Northwest Plateau									ш								1		1			1			2			1				20.4
Chillicothe M Maximum	78 49	52	82 50	56	44	50	79 50	93 57	47	91 52	91 63	90 66	48	71 48	55	71 61	79 54	79 55	61 38	73 34	76 41	59 -10 57	70 32 66	69 37	65 32 60	55 37 54	58 39	51 32 50	46 27	53 31	26	72.4
Grant City) Maximum	68 53	44	45	62	43	80 50	76 50	90 54	53	88 64	84 64	77 51	44	70 49	61	75 61	61	66 46	58 38	69 37	72 52	57 38 55	36	67 42	39	38	60 41	34	27 42 29 43 36 42 31 50 36	49 34 52 38	51	68.3 46.3
Kansas City Maximum Minimum	76 58	49	57	61	54	62	80 59 76	91 68	68	88	85 67 85 61	86 52	48	82 52 77 45 83 55 67	74 66	75 63	64 49 58	70	38 57 42	71 47	74 45 69 37 73 57 75 52 73 50 71	55 41	69	69	58 45 58 35 65 41 59 33 66 37 61	38 64 46 51 36 62 43 48 36 51	41 57 41 54 36 65 41 58 36	34 47 38 46	36	38	54 38	70.3
Kidder W Maximum	71 49	42	45	50	42	44	50	90 52	51	67 88 55	85 61	86 61	45	77 45	73 53	73 61	58 52 69	69 34	56 35 63	69 36	69 37	41 55 39 58	66 34	66	58 35	36	36	32	31	49 31	29	*68.2 43.2
Lexhigton	57	48	84 57	63	49	58		90 69	65	90 68	67	88 71	51	83 55	76 65	76 63	53	74	-11	36 72 42 71	73 57	58 42 54	70 39 66	69	41	43	41	32 54 36	36	51 38	51 33	73.2 51.3
Maryville) Maximum	58	40	48	85 63	41	78 52	54 75 53 82 55	89 59	85 49	88 63 90	65	76 48 77	51 43 56	67 49 78	82 60	76 62	60 46	67	5·1 37	71 37	75 52	54 36 61	66 34 72	66 34	33	36	36	48 32 50	42 30	38 49 35	51	67.2 45.6
Oregon Maximum Minimum Minimum Minimum Maximum Minimum 57	44	54	66	45	60	82 55	94 63 90	91 56	67	87 68	49	56 45	78 51	62 62	78 62	67 47	69 39	60 38 56	37 75 42 72 41	73 50	61 37 55	72 40 69	73 41	37	51 43 55	63 37	35	48 34 45	53 36	51 35	72.3 48.2 60.6	
St. Joseph J Maximum	73 55	46	51	89 59	48	58	78 56	67	56	88, 69	84 69	82 48 87	45 52 47	51 77 51 72 47	81 63	75 58	59 49	68 43	41		43	89	41	69	61 38 65 37	55 44 58	59 39 48	46 38 52 34	45 35	51 36	35 52 32 58 29	69.6 48.4
Trenton Maximum Minimum	72 51	74 46	78 48	84	80 45	79 50	83 52	90 56		88 60	89 62	87 67	74	72 47	69 62	76 63	68 52	67 46	58 47	64 36	68 41	39 70 37	64 34	67 37	37	41	44	34	48 28	48 36	29	70.4 46.4
	1	1	1	1	1	1 1					3						-	1			}	-		1			- 1	4	-			

^{*,} b. *, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

* Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

** Instruments are read in the morning; the maximum temperature then read is charged to the WBO, St. Louis, 11-17-28-925.

Nat. Hust.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU. CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

MISSOURI SECTION.

GEORGE REEDER, Meteorologist.

Vol. XXXII. Columbia, Mo., November, 1928. No. 11.

GENERAL SUMMARY.

The outstanding feature of November, 1928, in Missouri, was the excessive rainfall. There was nothing unusual about the other elements, except probably the sunshine was less than

normal as there were four distinct rain periods.

It was the wettest November in about 60 years, considering the State as a whole. All sections were wetter than normal, except that part of the Ozarks sloping to the northward from about Dade and adjacent counties northeast to the Mississippi River; and the east-central counties reaching north to Marion. Some of these counties had actually less than the normal amount. The deficiency, however, disappears under the large excess for the remainder of the State.

The monthly totals as well as the 24-hour falls were larger than in any other November of record, and equaled the amounts usually associated with wettest spring and early summer months. The largest monthly local total was 10.88 inches at Centerview, Johnson County, but several other stations had amounts nearly as large. In other years the only November rainfall that compares with this was in 1847 when 8.63 inches fell at St. Louis; and in 1879, with 8.90 inches at Savannah, 8.72 inches at Ironton, and 8.45 inches at St. Joseph.

Another unusual feature, although probably a natural corollary connected with excessive rainfall any month in this State, was the extensive river floods, and a record for November. All rivers in the northern part of the State were out of banks once or twice; the Blackwater, the Osage, and the Missouri River from Lexii gton down extensively inundated the lowlands. The damage and loss to corn and growing wheat, washed away soil, and highways, was very heavy. Traffic of all lines was held up for one to two days. It is not practicable to even estimate the loss in dollars. The State Highway Department alone reported that the damage would run near the million mark.

TEMPERATURE.

The monthly mean for the State, 67 stations reporting, was 44.6°, and practically normal. The temperature distribution was quite uniform. The highest temperature was 79° at Marshall on the 15th. The warmest days were generally the 15th, 16th, and 17th. The lowest temperature was 9° at Neosho on the 26th. There were several cool periods but the 20th, 25th, and 26th were the only real cold days.

PRECIPITATION.

The average for the State, 99 stations reporting, was 5.10 inches, or 2.75 inches more than the 56 years' average, and the largest excess of record for the month of November. The precipitation was unevenly distributed. It was about normal and less in most of the Ozarks, and the east-central counties. In the southeast amounts were subnormal in a few cases, normal to excessive in others. On the other hand, most of the northern, central, and west-central counties received heavy to excessive amounts ranging in most cases from two to five times the normal. There were about four distinct rain periods: 1st to 3d; 7th to 9th; 14th to 19th, and 27th to 30th. There were excessively damaging downpours on the 16th, and 17th. The following table gives some of the heavier amounts:

					Greatest I.	11
Station.	15th.	16th.	17th.	24 hrs.	48 hrs.	72 hrs.
Waverly	.06	1.45	6.33	6.33	7.78	7.84
Concordia		2.90	6.30	6.30	9.20	
Centerview	****	6.52	3.22	6.52	9.74	
Harrisonville	****	3.30	6.30	6.30	9.60	9.63
Lamonte	T.	3.80	1.80	3.80	5.60	
Marshall		4.60	2.52	4.60	7.12	
Clinton		2.30	1.52	2.30	3.82	
Chillicothe	.02	1.02	4.25	4.25	5.27	5.36
Kidder	.02	.85	3.58	3.58	4.43	4.76
Lexington		1.70	5.54	5.54	7.24	
Kansas City		5.70	.47	5.79		
Macon	••••	1.09	4.50	4.50	5.59	••••
Vintrovillo.	• • • • •	1.85	3.25	3.25	5.10	• • • •
WILKSTILL		1.00	0.20	0.20	0.10	

The result was a severe loss to crops and bridges and other property in the valleys of the One-Hundred-and-Two River; the Grand, Charitan, the Blackwater, the Osage, and the Missouri River from about Lexington to its mouth, and most of the smaller streams of the northeast part of the State.

The snowfall was less than normal. Appreciable amounts remained on the ground for a short time in the northwestern counties and the northern border. Elsewhere it melted as fast as it fell, as a rule.

MISCELLANEOUS PHENOMENA.

Fogs. dense.—2d, 5th, 10th, 15th, 28th, and 29th.
Frosts, killing.—3d, and 4th, and St. Louis on the 29th.
Halos, lunar.—20th, 23d, and 26th. Solar.—13th, 15th, 21st, 26th, and 30th.
Sleet. light.—2d, 3d, 17th, 18th, 19th, 26th, 27th, and 20th.
Thunderstorms.—15th, 16th, and 17th.

OF

PRESSURE	MOR	ועוו	LI, a	OMP	TIMI	s, ANI	7 44 1	ע עוויי	AIA	•
THE LIB	essure ()	A Clar humi	ive dity	Suns	hine			Wind		
	Seg E		11	140		1.00	our- ty	Max	k. velo	city
Stations N	barghaetric	7 a. m. 6	7 p. m.	Total hours	Percentage of possible	Total move- ment miles	Average hould by velocity	Miles per hour	Direction	Date
Columbia Hannibal Kansas City St. Joseph St. Louis Springfield Cairo, 111 Keokuk, Iowa	30.12 30.10 30.13 30.11 30.13 30.16 30.17 30.11	85 81 79 82 79 83 78 80	68 63 66 66 67 65 72	140 172 147 133 143 	46 57 49 44 47 	5,535 6,263 7,260 6,056 9,394 7,240 6,125 5,479	7.7 8.7 19.1 8.4 13.0 10.1 8.5 7.6	35 30 30 29 41 29 32 31	s. sw. sw. sw. s. sw.	16 14 14 14 14 15 17 14

Beginning January 1, 1928 wind velocities are by 3-cup anemometers.

COMPARATIVE DATA FOR NOVEMBER.

		Temper	ature			Precipita	ation		Nur	nber	of d	lays
Year	Mean	Departure	Highest	Lowest	Меап	Departure	Greatest in 24 hours	Total snowfall, unmelted	With .01 inch or more	Clear	Partly cloudy	Cloudy
1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1902 1903 1904 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1918 1918 1918 1918 1918 1918 1919 1918 1918 1918 1918 1918 1918 1918 1918 1918 1919 1918 1918 1918 1918 1918 1918 1918 1919 1918 1919 1918 1919 1918 1919 1918 1919 1918 1919 1918 1919 1918 1918 1918 1919 1918 1919 1918 1918 1918 1918 1918 1919 1918 1919 1918 1919 1920 1922 1925 1926 1926 1927 1928	41.6 49.9 40.9 41.6 39.9 9 40.1 41.6 3 49.9 42.5 43.7 45.8 45.8 65.1 45.9 45.6 46.1 46.2 47.8 46.1 46.1 46.1 46.1 46.1 46.1 46.1 46.1	-2.0 -3.7 +2.9 -4.0 -3.5 -2.7 -2.6 -2.0 -1.3 -0.2 -3.7 +5.9 +0.1 +0.5 -2.7 +2.2 -1.1 +0.0 +10.0 -1.5 +2.3 +4.0 +4.9 +1.5 -2.5 +1.5 +1.5 +1.5 +1.5 +1.5 +1.5 +1.5 +1	8773 800 822 82 82 82 84 84 85 85 86 88 88 88 88 88 88 88 88 87 87 88 88 88	15 8 20 20 29 21 3 2 5 5 6 10 15 14 4 2 2 12 2 6 6 10 15 4 7 2 2 12 2 6 6 10 15 6 14 4 4 2 2 6 6 10 15 6 14 4 2 2 12 2 12 2 12 2 12 2 12 2 12	3.26 3.43 3.60 1.54 3.37 2.260 1.58 3.27 2.28 2.28 3.62 2.52 3.62 2.52 4.44 4.43 0.55 2.52 2.52 2.52 2.52 2.52 3.62 2.52 3.62 2.53 3.62 2.54 4.63 3.63 3.63 2.54 4.63 3.63 3.63 3.63 3.63 3.63 3.63 3.6	+0.94 +1.11 -0.01 +1.28 +0.28 +0.73 -0.74 +1.05 -0.04 +0.08 -0.04 +1.20 -1.08 +1.20 -1.03 +0.21 -1.21	4.86 4.06 4.06 4.06 4.06 4.06 8.00 2.14 2.49 4.06 8.00 6.18 0.70 2.15 2.37 2.16 2.16 2.16 2.16 3.00 4.00 3.00 4.00 3.00 4.00 3.00 4.00 4	3.2 0.2 T. 2.3 0.2 T. 2.3 0.4 1.1 T. 5.0 0.4 0.1 1.1 T. 0.1 0.1 T. 0.1 T. 0.1 0.1 T. 0.1 T. 0.1 0.1 0.1 T. 0.1 0.1 T. 0.1 0.1 T. 0.1 0.1 0.1 T. 0.1 0.1 0.1 T. 0.1 0.1 0.1 0.1 T. 0.1 0.1 0.1 0.1 T. 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.	117555644886666764952684888373573543666557646	 11 14 15 10 11 11 13 14 11 15 17 8 13 12 11 15 12 11 15 16 16 16 16 16 16 16 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	799778897779856664778658674545676686	12 12 16 13 12 12 10 8 8 6 12 7 7 11 11 10 12 10 8 9 7 8
1926 1927 1928	39.6 46.8 44.6	-4.9 +2.3 +0.1	78 89 79	0 12 9	2.98 3.55 5.10	+0.63 +1.20 +2.75	2. 25 3.41 6.52	4.8 0.9 0.5	7710	11 6 13	7 9 4	12 15 13

42		1		1717/1	ATOI.	.0G1	CAL	DA	TA:	M	ISSC	ORI	SEC	F10.	N	-	_	_		November, 1928
										No		per, 19		-						
	- (4.5)	1/2	d.	-	Tempera	aure,	m degi	rees ra	ulir.	 	Preci	pltation	1, 111 1114	mes.	1		01 0	ays.	ction	
Stations.	Counties.	Elevation, feet.	Length of record, years.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	With precip	Clear.	Partly cloudy.	Cloudy.	Prevailing direction of wind.	Observers.
Northeast Plain Brunswiek Clifton Hill Columbia Downing Fayette Fulton Gorin Hannibal Jefferson City Kirksville Louisiann Maeon Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Unionville Warrenton Keokuk, Iowa Section means and	Chariton Randolph Boone Schuyler Iloward Callaway Seotland Marion Cole Adair Pike Macon Audrain Monroe St. Charles St. Louis Citydo Shelby Lewis Putnam Wurren Lee, Ia	652 731 784 876 661 818 700 531 557 969 469 875 800 748 578 779 600 1,000 614	48 28 37 6 47 39 40 35 39 38 38 6 39 53 115 34 29 34 45 55	42.9 43.4 41.5 42.4 44.4 44.4 45.0 41.9 43.2 45.4 46.0 41.9 43.2 45.4 46.0 41.8 45.6 43.2 43.2	+ 1.4 - 0.4 + 1.2 + 0.1 - 0.1 + 2.1 + 1.3 + 1.9 + 0.8 - 1.5 - 0.1 + 0.6 - 1.3 - 0.6 + 2.7 + 1.8 + 1.9 - 0.1	75 71 70 72 75 69 70 71 70 73 72 67 70 69 72 72 75 69	15 15 15 15 15 124 15 15 15 15 15 15 15 15 11 11 11 11 15 15	20 16 19 17 14 17 21 18 17 18 12 19 23 23 23 15 17 19 20 12	25 25 25 26 26 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 25 26 26 26 26 26 26 26 26 26 26 26 26 26	34 45 34 31 41 34 37 33 34 30 33 32 30 31 40 40 40 40 40 40 40 40 40 40 40 40 40	5.32 7.24 4.68 5.49 6.52 2.97 5.86 3.82 2.32 8.15 3.50 8.15 1.90 6.44 0.74 1.95 5.43 7.20 6.48 2.15 5.48	+3.35 +5.30 +2.37 +2.37 +3.86 +4.52 +0.72 +3.90 +1.87 +0.05 +6.46 +1.22 +6.22 +1.48 -1.80 -0.93 -0.36 +3.35 +5.27 +4.66 -0.44 +3.24 +2.59	2.04 2.50 2.35 2.50 2.50 1.14 3.11 1.85 0.95 3.25 1.30 4.50 1.45 0.22 0.79 0.70 2.48 0.22 2.85 3.80 0.67 3.80 0.67 3.80	1.2 0.5 0.3 T. 0.3 1.0 T. 0.5 T. 0.5 T. 0.5 0.5 0.3 0.3	11 11 12 14 10 13 10 11 11 8 12 10 14 13 11 4 12 12 12 13 11 14 13 11 11 14 13 11 11 11 11 11 11 11 11 11 11 11 11	14 13 12 11 13 13 11 14 12 13 9 14 11 11 12 13 13 13 11 14 11 12 13 13 11 11 12 13 13 14 11 12 12 13 14 14 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	0 3 3 2 10 3 5 15 3 6 6 1 7 4 3 1 5 5 5 2 4 4 4	16 14 15 14 15 14 14 14 14 15 15 15 15 15 16 16 16 14	SW. S. W. MW. SW. N. MW. SE. W. W. SW. W. S. SW. SW. S. SW. SW. SW.	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Bureau James Taylor J. D. Settle Chamber of Commerce J. W. Pulliam U. S. Weather Bureau Mrs. Frank Kllegel Prof. J. S. Stokes Stark Bros. Nurseries W. C. Brown Mrs. Abble Snoddy J. S. Conway L. C. Sneger U. S. Weather Bureau St. Louis University J. G. Jewett Frank Hall Geo. W. Davis Prof. A. W. Ebeling U. S. Weather Bureau
Southeast Lowlands Campbell Carruthersville Doniphan Juckson Marthe Hill Morehouse Poplar Blaff Sikeston Cairo, 1fl. Section means and	Dunklin Pemiscot Ripley Cape Girardeau Bollinger New Madrid Butler Seott Alexander, Ill extremes	314 265 314 428 470 289 339 318 358	2 31 23 36 32 26 23 22 52	47.4 51.0 46.1 45.9 46.4 48.7 48.0 47.7 47.6	+ 1.1 - 1.5 - 0.8 + 2.0 - 1.3 + 0.6 + 0.4 + 0.4	71 74 68 67 68 67 72 72 72 70 74	15 15 17 16 6 6 15 15	16 23 15 15 14 16 19 25 14	26 26 26 26 26 26 26 26 26 26 26	39 29 42 42 38 44 33 28 44	3.20 3.32 7.71 6.45 7.04 4.67 6.80 3.30 5.31	-0.53 +4.59 +3.32 +3.87 +1.02 +3.54 -0.38 +2.20	1.40 1.20 2.00 2.26 1.80 1.82 2.16 1.82 1.90 2.26	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9 7 8 9 12 11 11 11 	13 15 14 12 15 14 16 11 ¹ 9 13	3 3 6 2 1 1 5 2 1 6 4	14 12 10 16 14 15 9 8 ¹ 15	n. nw. sw. n. u. sw. w. s. s.	Jeff. King Sam Smith W.W. Martin John G. Putz R.A. DeWitt John A. Spence J. II. Wolpers Glen R. Fisher U. S. Wenther Bureau
Ozark Plateau Arcadia Aurora Birchtree (near) Bolivar Deau it Eldon Farmington Goodland Greenville Hailey Koshkonong Lebanon Lockwood Monntain Grove(near) Neosho Rolla Salem(near) Seligman Seymonr (near) Springfield	lron Lawrenee Shannon Polk MeDonaid Miller St. Francois Iron Wayne Barry. Oregon Laclede Dude Wright Newton Phelps Dent Barry	1,000 1,071 1,000 934 918 1,000 381 1,350 958 1,265 1,078 1,463 1,011 1,019 1,173 1,542 4,612 4,612	466 377 322 333 300 311 166 333 55 2266 399 221 2266 399 227 223 225 221 399	43.0 46.3 46.0 52.0 11.8 44.6 44.8 46.1 46.8 42.0 46.4 43.8 44.9 47.6 44.4 45.4 45.3	- 1.0 + 0.3 - 0.5 - 3.4 + 0.3 + 0.3 + 0.2 - 1.3 - 3.4 - 1.9 - 1.1 - 1.9 + 0.4 - 1.1 - 1.9 - 0.4	71 70 71 71 78 68 71 72 70 68 69 71 71 74 67 69 76 68 68 68 78	7 14 7† 18 15 7 7 7 7 7 14 11 6 6 11 13 14 11 6 6 11 11 18	13 19 15 12 17 14 10 12 21 14 18 16 9 16 13 20	26 26 26 26 26 26 26 26 26 26 26 26 26 2	37 36 43 41 36 39 47 49 41 45 36 40 41 34 37 35 37 37 37 37	4.45 3.22 4.85 3.54 4.16 3.71 3.42 6.00 1.81 5.15 2.75 4.28 4.27 2.32 2.92 5.01 4.31 2.08	+0.83 +0.43 +1.96 -0.25 +0.53 -0.25 +0.53 -0.54 +1.85 +1.21 +0.01 +2.65 +1.98 -0.56 +1.98	1.08 1.07 1.40 1.71 1.35 1.26 1.65 1.41 1.40 0.67 2.72 1.33 2.00 0.75 1.63 1.63 1.65 1.65 1.65 1.65 1.65 1.65 1.65 1.65	T. T. 0 0.4 T. 0 T. 0.2 T. 0.3 0.4 T. T. 1.6 0.2	9 6 7 5 8 11 9 10 2 9 11 7 10 9 8 10 6 6 6 9 8	17 11 15 17 10 11 14 16 13 10 16 13 14 15 5 13 16a 15 14 15	1 4 1 1 · · · · · · · · · · · · · · · ·	12 15 14 .3 16 13 13 13 14 13 15 13 14 14 14	sw. sw. n. sw. n. w. n. w. sw. n. se. se. sw. w. n. sw. n. sw. n. sw. n. sw. n. sw. n. sw. sw. sw. sw. sw. sw. sw. sw. sw. sw	Arcadia College W. T. Troughton V. H. Kirkendall Sonthwest Baptist College H. E. Hean E. H. Shepherd Robert Porsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lon Mulcare C. S. Crow Ho. Fruit Exp. Sta. U. S. Fisheries Sta. F. H. Lane A. C. Leech IFloyd E. Fawver Im H. Hailey U. S. Weather Burean
Southwest Plain Appleton City Centerview Clinton Harrisonville Lamar Lamonte Murshall Nevadatt Warsaw Section means and	Johnson Henry Cass Barton Pettis Saline Vernon	862 687	33 40 34 50 40 26 38 34 27	45.1 45.0 46.2 42.5 44.5 44.6 45.5 45.6 47.5 45.1	$\begin{array}{c} + 0.1 \\ - 1.1 \\ + 0.1 \\ - 2.1 \\ + 0.2 \\ - 0.1 \\ + 1.2 \\ 0.0 \end{array}$	75 75 74 75 72 77 79 73 74 79	15 15 15 15 14 15 15 15 15	20 19 20 16 18 18 18 19 17 16	251 25 26 25 26 26 26 26 26 26 25	31 28 40 40 36 34 36	5.28 10.88 4.78 10.84 2.97 6.85 8.78 2.36 5.03 6.93	+3.15 +9.10 +2.90 +8.89 +0.73 +4.95 +6.70 +0.48 +2.62 +4.88	2.95 6.52 2.30 6.30 0.95 3.80 4.60 1.00 3.00 6.52	T. T. 0.1 0.5 T. 1.2 T. 0.1 0.2	8 5 6 13 11 11 11 5 7 8	11 8 ¹ 11 9 12 8 14 13 13	9 6 ^b 8 5 3 13 2 3 5 6	10 14 ⁵ 11 16 15 9 14 14 12 13	sw. sw. sw. nw. sw. sw. nw. nw. w.	W. G. Bigelow E. A. Markey A. E. Derwent, M. D. John H. Putterson Jesse A. Mann J. E. Wheeler Dr. W. H. Black George A. Kamp Everett Martin
Northwest Plateau Bethany Chillicothe Conception Edgerton Grant City Kausas City Kidder King City Lexington Muryville Oregon St. Joseph Tarkio Trenton Section means and	Livingston Nodaway Platte Worth Jackson Caldwell Gentry Łafayette Nodaway Holt Buchanan Atchison	980 856 1,134 963 1,020 1,095 688 1,169 1,048 967 916 822	35 18 38 7 23 38 34 2 42 37 71 19 24 31	42.1 41.6 42.4 43.6 41.4 45.2 40.0 45.5 41.6 44.2 43.6 59.8 42.2 42.6	$ \begin{vmatrix} -1.0 \\ +1.0 \\ -1.0 \\ +1.5 \\ -2.4 \\ +1.5 \\ +2.6 \\ +3.9 \\ -0.8 \\ -0.2 \end{vmatrix} $	70 75 73 73 73 74 72 69 74 73 64 66 75	15 15 15 15 15 14 15 15 15 15 15 15 15 15	15 15 14 18 15 21 15 20 14 16 18 15 18	25 25 25 25 25 25 25 25 25 25 25 25 25 2	36 38 36 33 25 25	6.75 8.43 7.38 5.22 5.64 8.55 7.78 7.53 9.12 4.98 6.48 6.98 4.55 7.35 6.74	+4.98 +6.10 +6.02 +3.75 +4.03 +6.72 +5.94 +7.27 +3.33 +4.79 +5.59 +3.10 +5.55 +4.62	2.06 4.25 2.40 1.77 2.02 5.79 3.58 1.85 1.30 1.92 3.30 1.38 2.34 5.79	1.0 T. 5.0 T. 5.0 0.6 0.3 5.0 0.1 2.5 0.5 0.1 6.5 T'.	10 12 8 8 9 10 11 11 11 9 12 9 8 8 11 13	11 12 15 14 14 16 14 13 15 16 13 15 14	4 6 3 7 4 1 6 7 5 3 7 1 4	15 13 12 12 9 12 13 10 10 10 11 10 14 12	nw. nw. sw. sw. s. sw. nw. se. sw. nw. nw. s. nw. s. nw.	M. H. Moulton Win, J. Olenhouse Fr. Adelhelm Hess Fred I. Stiff W. P. Spillman U. S. Weather Bureau Linn Terry H. L. Yates Miss Carrie Loomls J. R. Brink Mina Wright U. S. Weather Bureau Albert Volker W. H. Estes

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

Reference letters *, b, o, appearing in the table indicate number of days missing; for example, b, represents two days, etc.

† Also on other dates. †† Received too fate to be included in means and summaries. ‡‡ Post-office address of Dean is Anderson.

49 5.10

+2.75 6.52

0.5 10 13

4 13 sw.

9 26

79 15

44.6

+ 0.1

State means and extremes

Daily Precipitation for November, 1928

	rainage-																															
															Da	ay o	f mo	onth.														al.
	ousins.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	'20	21	22	23	24	25	26	27	28	29	30	 Total.
Brunswick Gran Clifton Hill Chan Columbin*** Downing Miss Fayette Miss Fayette Miss Fulton de Gorin de Hernaunt Miss Haunibal*** de Hernaunt Miss Louisiana de Macon Chan Mexico Miss Minu Gran Monroe City Miss St. Louis (1)*** Miss Louisiana de Macon Chan Mexico Miss St. Louis (1)*** St. Charles St. Louis (1)*** St. Charles Miss St. Louis (1)** St. Charles Miss St. Louis (1)** Gran Miss Gran Monroe City Miss St. Louis (1)** Gran Miss Miss Miss Miss Miss Miss Miss Mis	souri nd riton souri ouri o sissippi o souri o souri o sissippi o riton sissippi nd sissippi nd sissippi nd o souri souri o o nd riton sissippi nd riton sissippi o o o o o o o.	.69 .62 .95 .32 .57 .70 .20 1.50 .40 .44 .30 .40 .89 .30 .30 .89 .30 .80 .80 .40 .40 .40 .40 .40 .40 .40 .40 .40 .4	.89 .95 .55 .68 .06 .21 .25 .30 .15 .25 .20 .1.05 .20 .1.15 .26 .43 .25 .43 .25 .43 .25 .20 .43 .25 .25 .20 .43 .25 .25 .20 .20 .20 .20 .20 .20 .20 .20 .20 .20	.02 .03 .03 .08 .03 .25 .04 .03 .17 .24 T. .01 .15	.02				.04 .04 .03 .05 .04 .06 .20 .05		.07 .06 .05 .03 .10 					.27 .20 .01 .18 .35 .7 .36 .07	1.87 1.30 2.50 2.27 .80 2.50 1.19 1.77 .54 .95 1.85 1.30 1.09 1.45 .60 2.48 .23 .04 .08 .85 1.85	2.40 2.204 2.50 .53 2.555 .20 3.81 3.25 .40 4.50 4.78 4.00 1.62 .17 .47 2.48 4.79 2.48	.07 T .01 T .01 .05 .20	08 .06 .05 .07 .03 .03 .03 .01 .00 .09 .09	T.		.30					.022 .077 .011 .011 T032 .01105 T022 .011		.01 .01 .12 .24 .05 .15 .09 .17 .16 .20 .55 .19 .22 .20 .19 .20 .19 .10 .10	.17 .12 .7 .26 .22 .15 .20 .25 .35 .01	6.19 5.32 7.21 4.69 6.52 97 5.86 3.86 2.97 5.86 3.82 1.90 2.32 3.50 6.44 2.24 1.90 6.44 1.90 1.
Cape Girardenui	Francis sissippi do Francis ck sissippi sissippi lo ck sissippi do do dk sissippi do dk sissippi do dk	.06 .16 2.00 .70 1.10 .45 .08	.85 .94 1.09 .90 .66 .90 1.92	.05	.04			Ť.		'i'.	.04				.04 T. 12 T.	.06 .75 .45 .40 .06 .10	2.25 1.15 1.50 1.17 1.12 .70 .01 2.16	.53 .02 .62 .60 .60 .43 .02 .32	.44	.12	.02								.16 .73 .09 .30 .12 .16 .16	.22 .53 .14 1.38 2.26 1.80 1.82 .10 .83 1.82	1.62 1.20 1.86 .30 .32 2.20 1.01 .32	3,20 6,32 3,32 5,12 7,71 6,45 7,04 4,28 6,80
Aurora Neos Birchtree (near) Blac Bolivar Osag Caplinger Mills Osag Dean Neos	Francisshockgegegesonosonodosonodosonodod	.46 1.01 	T. 13 .86 .06 .45 .08 .41 .4519		.11		т.	.03	.30	T. T. T. T. T. T. T. T.	.03							.44 .75 .40 .40 .40 .40 .40 .40 .75 .75 .71 .56 .60 .96 .45 .75 .75 .75 .75 .75 .75 .75 .75 .75 .7	T. 2.45 T	.09 .04 .08 T05 .01 .06 T06 .12 .05 .15 .07 T. T02 .07 T. T08	.23						Ť.	.02 .02 .05 .12 T. .05	.01 .03 .05 .18 .09 .02 .02 .02 T. T.	.84 1.40 .18 .40 1.35 .10 1.75 1.26 1.65 1.41 1.40 .67 .38 1.33 .28 .45 .85 1.67	T. T	4.45 3.22 4.85 1.87 3.54 4.16 3.71 3.62 5.59 3.42 6.00 1.81 5.15 4.22 2.75 4.27 1.99 2.32 2.92 4.31 2.03 4.31 2.03 4.31 2.03 5.52 2.75 4.27 4.27 4.27 4.27 4.27 4.27 4.27 4.27
Concordia h Miss Harrison ville Osag Joplin * Neo Lamar d d Lamoute Miss Marshall Osag Oscoola d Warsaw d Waverly Miss	ge. sonri ge souri ge. sito do ge. do souri do ge. do sonri do ge. soori	.90 .46 .03 .43 .40 .84 .66 .40	.24 T03 .15 .30 T10 T89	.08 .03 T. T. 1.	.04		.06	 02 T02 .02 .02 T. T.	.03	T01 .01 .02 T					.25 .16 .62 .60 .31 .25 .47 .51 .39	.92 T.	2.30 2.90 3.30 .11 .32 3.80 4.60 .21 46 3.00 1.45	6.30 6.30 .95 1.80 2.52 1.00 .63 .70 6.33	.03 .12 T. T.	.05 .03 .10 .04 .04 .05						r.	T.	.20 T. T. T. .08	T: .01	.10 .05 .42 .30 .25 .10	.11 .06 .03 .02	 10.45
Northwest Plateau Albany Grau Bethany decinication deconception deconce	souri ad souri lolo	1.36 .33 1.51 .80	.07 1.63 1.49 1.12 1.30	T. .34 .03 .14 .35			T.	.02 .01 .03	.02	T. T24	.05				.11 .15 .18 .15	.25	5.70 .85 1.52 1.70 .05	3.58 1.85 5.54 1.20	T. .33 .01 .15 .41	.02 T						.02		.13 .05 T. .10	T. T. T. Oi	.45 .63 .29 .44 .42 .78 .05 .51	.47 .11 .50 .35 .08 .16 .52 .12	6,40 6,75 8,43 7,38 5,22 6,98 5,64 8,55 7,78 9,12 4,98 6,48 6,98 4,55 7,36

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation.

11 Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

12 Trace, or less than 0.01 inch.

13 Precipitation is for 24-hour period, midnight to midnight.

14 Precipitation in the next following measurement; separate dates of fall not recorded.

15 Precipitation is for 24-hour period midnight.

	,					D	aily	Te	mp	erat	ure	s fo	rN	ove	mb	er,	192	8								,						
Stations	1	2	8	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30]	Mean
Northeast Plain	52	48	40	56	61	63	60	54	43	60	66	60	62	70	75	57	46	40	43	40	59	40	57	48	35	46	40	43	42	46		52.1
Brunswick \$\sqrt{\sq}}}}}}}}}}}}}} \simptiniteseptrimeset}\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}}}}}}}}}}}}}} \simptiniteseptrimeset}\sqrt{\sintitta}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}	34 54	48 52	86	28	32	35 64	39 62	58 33 55	36 41	31 56	82 65	32 57	90	41 65	42 70	49	45	38	31	28	29	48 34 46	25 59	33	20	21	23.	84 45	39 45	31		33.7 52.5
Fayette	45 53	38	36	28 56 29 58	62 38 62	38 67	45 60	55 36 59	36 41	33	43	35 61	62 40 62 30	51	57 75	56 61	40 57	40 35 46	89 32	28	58 34 60	27 50	25 60	50 30 50	35 19 37	21 46	42 35	40	41 43	45 33 48		36.5 53.7
Hannibal Minimum	40 51	43	34	23	62 28 60	83	44 61	30	34	33 59 27 53 36	29 65	81 54	30 60	51 70 38 63	44	48	44 62	36	42 28 40	28 35 28 39 28 35 29	60 26 56	32	19 56	24 50 30	17 32	14	41 19 41	44 35 42	24	27 45		31.0 51.3
Jefferson City \$\$ Maximum	43 57	43	86	23 55 29 56 21	40 43	62 38 66	44 64	52 37 57	40 36 45	36 62	43 61	36 64	37 65 35	52 66	57	55	39 62	41 36 46	33 43	29	34 60	44 30 50	27 61	30 62	21	23	35 43	40	40 51	32 44	-:-	37.0 55.5
Kirksville Minimum	53 49	43	35	21	30 60	29 62 34	38 59	57 35 56	45 34 44	33 57	32 66	46	35 60	44	70 50 71	55 69 55 65 53 65 58 56 51	49 56	46 37 51	31	46 27 37 25 40 30	29	36	26 55	31	40 32 34	18	23 37	34	40	36 41		85.3 52.0
Louislana	40	40	35	54 27 56	31 60	34 62	32 62	83 60	34 50	33	33 66	32 60	36 60	48 62 45	43	53	36	51 34 48	37 35 40	25	29 56 27 55 27 56 26 59	48 33 53 37	25 56	31 54 32 55 37 47 47 34 50 29 51 33 50 30	34 17	42 20 45	31	47 35 45	41 25 45	29 45		32.9 53.8
Maconss	53 35 50	45 49	40	28	35 60	38 62 35	44 59	40	30 40	33 52 33 56 32 52 52 32 50	40 63	38	28	45 68	50	58	36 65 45 47 42 59 49 66	38 38 36	40 33 40	30	27 56	37 45	22	37	43 22 34	18	42 34 40	45 38 43	45 40 41	35		36.1 50.5
Mexicoss	32	44	36	27 54	38	35 63	37 64	54 32 57 34	33	32 52	35 68	38 56 32 57 35 55	28 59 35 62 36 59 38 58 32 62 35	44	73 46 72	51 63	42 59	36 41	30 41	41 26 38 27 41 31 37 25 38 27	26 59	45 33 47	56 26 56	34 50	12	17	40 27 41	43 33 43	41 38 46	43 30 44		33.8 52.3
St. Louis(1)	59 33 52 44	49 43 56	38 43	29 55 35	60 31 63	63 36 62	38 66	34 55	38 34 42	32 50	34 70	35 55	36 59	64 38 60	51 67	63 55 66 60	49	87 43	31	27	28 59	47 32 47	56 25 54	29 51	38 20 33	45 19 45	41 23 42	43 34 45	46 38 52	32 52		34.0 53.1
Unlonville Maxlmum	44 52	41 45	39	35 54	40 62	46 58 32	45 55	55 37 52	42 37 45	38	38 65	42 62 32 63	38 58	48 66	59	60	43 48 36 66	39 36 34	36 37 30	31	31	47 33 47 32 55 35	31 57	33 50	33 23 37	45 24 44	42 37 40	45 38 44	40 44	38 40		38.8 50.9
Warrenton Minimum Maximum	52 40 56	45 38 53 43	32 43	54 26 55 30	40 62 36 62 35	32 64	40 64	31	45 32 51	38 58 32 53 37	40 70	32 63	32	48 61	72 44 67	65 45 66 56	36	34	30	25 38	52 26 57	32 55	24 57	30 52	17	18	32	44 35 44	83 43	27 49		32.6 54.6
Minimum	42	43	38	30	35	40	48	62 34	31	37	39	36	35	50	54	56	47	48 37	41 32	27	26	35	26	37	48 19	20	43 34	44 37	39	35		36.6
Southeast Lowlands Campbell	58	59	51	59	60	70	60	61	52	55	65	68	66	62	71	68	68	59	50	49	61	55	62	53	56	45	39	47	62	62		58.4
Caruthersville Maximum	40 65 36	42 59	38 62	37 58	60 30 55 39	37 58	46 58	40 58	52 32 70	33 64	32 63	29 61	33 66	38 68	60 74	57 72 62	45 71	38 65	37 58	27 49 31	23 61	36 55	38	53 21 62	26 57	16 44	33 43	47 37 48	45 62	43 62		36.3 60.0
Donlphan Maximum	54	54	47 42	41 57	59	38 67	39 65	40 60	42 54	39 52 31	38 64	42 60	38 62	48 59 37	63 65	62 67	59 68	41 58	40	31 47	32	40 54	52 30 52	42	26 57 50 52 27	44 23 43	37 39	48 39 58	47 61	46 59		42.0 56.7
Jackson	45 55 43 63	40 61	37 50	59 37 58 41 57 35 57 36	30 57	36	38 65	38 61	42 54 34 51	31 49	30 64	30 59	30	58	57	67 57 67 57	55 62	43 61 39	43 36 52	25 45	67 25 65 23 66	30 61	20 51	35 57	27 48	43 15 40	34	43 45 34	37 54	35 60		35.5 56.3
Poplar Bluff Minimum	43 63	45 57	36 46	36 61	31	65 36 72	41 66	39 65	29 54 32	49 35 59	32 65	32 69	63 24 67	43 65	64 55 68	57 69	56 65	39 54	52 35 45 37	26 51	23 66	36 57 39	19	36 65	23 60	15 58	42 29 40	34	61	38		35.5 59.7
Sikeston	45	46	39	35	61 31	72 39	46	43	32	36 56	30 64	30 59 32 69 35 60 38	67 29 65 32 65 37	43 65 37 60	68 59 72	69 59 70	45 71 59 68 55 62 56 65 53 68 58	43 64	37 54	47 25 45 26 51 35 47 29 43 32	24 61	39 55	53 21 53 25 50 32	60 35 57 36 65 34 60 36	48 23 60 26 58 28 38 27	40 15 58 16 52 19	34	47 37 51 34	46 54 36	63 45 60		37.7 158.5
Calro, Ill	59	60	44		55 37	66	60	58	49	44 50	34 61	38 60	32 65	40	56 70	59 70	69	41	38 41	29 43	28 59	55 38 50 37	25 50	36 57	28 38	19 41	44 32 41	34 49	36 60	45 60		¹ 37.6 55.0
Minimum	48	44	39	39	37	44	51	42	35	39	37	43	37	63 50	60	60	47	41	37	32	31	37	32	57 38	27	41 25	41 35	49 37	47	41		40.4
Arcadia///) Maxlmum	54	55	39	61	60	67	71	59	44	58	68	66	58	62	62	66	60	40	38	43	56	50	54	55	40	42	39	45	55	46		53.8
Aurora	54 27 54	44 53	36 34	31	32 61 35	30 68	42 68	36 58	44 29 48 41	58 31 60	33 69	37 68	24 68	27 70	48 66	58 67	57 66	40 37 42	34 38	26 42	22 60	30 53 34	18 62	55 18 54	21 44	13	14 41	33	55 35 54	40 54		$\frac{32.1}{55.5}$
Birchtree Maximum	44 51	32	29 42	60	61	69	50 71	59 36 58 42 69 36 59 35	41 61	32 57	42 66	66 37 68 35 65	39 63	53 57	58 62	58 71	40 63	42 35 49	30 42	25 45	30 66	34 56	26 58 20	41 57 36	22 50	19 45	36.	38 44	44	31 49		37.1 56.3
Eldon \$	46	40	34 35	29 59 30	34 64 30	36 61	59 65	36 59	32 36	32	30	41 60	32 65	48 59 34	55	55	49 68	49 39 38	33 41	26 48	23 62	24	20 60	36 41	22 41	45 15 46	40 33 47 17	35 59	35 42	43 36		35.7 52.1
Farmington	28 51	41 53	34	30 58	30 61	34 66	36 71	35 64	32 36 34 47 30 49 33 43 30 50 33 55 33	61 28 52 36 54 32	65 29 67	41 60 36 61 38	58 24 68 39 63 32 65 32 64 27 65 34 64 32 64	58	51 62	62	60	38 49	32 39 34	26 42 25 45 26 48 27 40 26 47 27	30 66 23 62 27 61	49 35 49	60 25 52	41 25 53	44 22 50 22 41 20 46 25 37 17 42 19 51 21	46 17 41	17 38	45 38 44 35 59 36 45 35 45 36	44 44 35 42 39 51 36 59 43 46 37 52 35 58 45 53	31 49 43 36 36 48 37 38 43 32 41 35 57 31		^b 31.6 53.7
Kosiikonong Minimum	38 52	42 53	35	31 54	36 59	43 65	47	36 58	30 49	36 54	35	38 64	27 65	46 58	62 52 62	58 65	49 67	38	34 42	26 47	22 68	49 34 56 37	19 55 28	42 58	20 46	14 46	32 38	35 45	36 59	38 57		35.6 55.5
Lebanon Maximum	28 51 38 52 47 52 48 53 36 59 46 50 42 53	42 53 39 40	40 35 35	58 31 54 38 56 28 49 29 59 24 53 30	61 36 59 35 51 33 63 33 65 31	47 69	68 53 69	64 36 58 42 57	33 43	32 60	67 30 69	42 63	34 64	49 64	57 65	58 65 59 66 56 65	49 67 47 55 52 59 50	48 39 39 30	42 33 39	27 40	22 68 27 49 23 63 25 62 24 59 25 60	37 49	49	52	25 37	46 21 44	38 32 38 33 45 19	36 46	43	38 43		38.2 51.9
Mountain Grove \(\lambda \ldots \right) Maximum \(\ldots \)	48 53	39 42	30	28 49	33 63	47 69 35 66 36 71 35 65 38	69 39 71	34	30 50	60 23 58 26 62 27 54 35	24 68	42 63 31 67 34 67	32 64	39 63 34	50 64	56 65	52 59	30 41	39 29 41	40 22 43 23 45 21 39 24	23 63	49 31 53 32 57 36 55 31	22 57 23 63	26 55	17 42	44 14 46	19 41	46 34 47 31 50 39 45 30	37 52	32 41		32.0 54.2
Neosho	36 59	42 37 58	30 39	29 59	33 65	36 71	39 69	36 60	33 55	26 62	28 71	34 67	34 69	34 74		57 72	68	41 35 46	41 30 43	23 45	25 62	32 57	23 63	26 58	19 51	46 16 44	41 19 45 35	31 50	35 58	35 57		32.3 59.0
Roiia Minimum	46 50	58 33 52	41	24 53	31 62	35 65	51 67	63 36 60 38 62 37 56	33 51	27 54	38 68 37	26 62	34 69 34 63 37	74 53 60	48 72 53 65	58 65	40 67	46 36 45	31	21 39	24 59	36 55	21 55	42 50	21 44	9 45 16	35 41 29	39 45	45 55	31 55		34.7 54.5
Springfield Maximum	42 53	52 29 45 32	25 35	30 54	62 37 61	38 66	48 67	37 56	33 48	35 56	37 68	38 64	37 62	46 68	49 64	52 65	34 64	45 28 39	40 25 38	24 41	25 60	48	21 59 30	34 51	44 20 37	16 44	29 41 35	30 46 38	34 54	30 43 32		33.1 53.2 37.5
(Minimum	45	32	30	31	38	46	47	42	39	32	40	41	43	51	58	62	38	33	31	27	30	34	30	32	22	44 22	35	38	43	32		37.5
Southwest Plain Appleton City Maxlmum	55	54	37	54	62	67	61	57	50	54	66	59	67	72	75	69	66	40	44	43	64	56	59	53	41	42	40	47	46	45		54.8
Centerview	55 45 56	54 36 48 42	31 48 33	26 55	34 62	37 65 36	49 60	35 59	39 60	26 63	66 38 67	36	39	53 71	47 75	69 54 64 52	39 60	36 60	31 42	43 *27 43	31 62 34	33 55	27 58	53 37 54	20 38	42 20 42	24 41	47 38 43	41 42	32 50		35.4 55.1
Cilnton) Maximum	65	42 57 35	33 48	27 50	35 62	36 63	34	34 52	33 60	36 60	42 62	67	61	43 72	46 74	52 66	37 63	33 40	28 43	26 42	34	36 52	27 60	35 50	19 40	28 45	33 47	38 42	39 46	32 40		*35.0 *54.7
Harrisonviile M Maximum	45 54	35 44	34 38	35 58	35 64	63 50 63	57 35 59	57 35 59 34 52 35 59 30	40 47	40 61	42 62 43 69 31	40 58 33	50 67	52 71	49 75	56 61	40 43	35 37	28 44	43 26 42 30 43 24		32 53	32 61	38 52	21 40	20 45	40	35 42	41 42 39 46 40 42 38 51	32 50 32 40 32 53 30 42	::	37.8 53.6
Lamar M Maximum	41 65 45 54 34 58 36 55	40 38	29	54 26 55 27 50 35 58 24 55 27 59 25 59	34 62 35 62 35 64 28 63 28 64 36 62 34 63 37 67	34 69 39 68 38 68 35 66 36 69 35	34 59	30 58	50 39 60 33 60 40 47 32 47 36 48 37 53 36 40 40 55	29 60	31 68	33 63 36	50 67 34 68 37 65 36 67 33 68 42 67 31	43 72 52 71 40 72 46 71 52 70 52 72 44 73 53	75 47 75 46 74 49 75 43 72 54 77 48 79 47 73 51 74	66 56 61 52 70 59	66 39 60 37 63 40 43 40 52 51 58 38 61 39 66	33 40 35 37 34 39 38 39 36 43 37 41 36 48 37	44 31 42 28 43 28 44 27 44 32 42 31 42 30 44 32 45 32	24 44 26	65 25 67 27 61 31 61 28 66 33 62 31	33 55 36 52 32 53 31 52 31 47 33 57 31 53 34 62 36	59 27 58 27 60 32 61 25 60 25 59 34 61 25 61 25 61 25 25	35 50 38 52 28 52 29 53 33 50 38 54 34 58 38	20 38 19 40 21 40 16 40 23 35 19 40 20 42 22 45 19	42 28 45 20 45 19 42 18 46 18	24 41 33 47 40 40 21 41 22 41 33 41 32 41 34 43 32	43 38 42 35 42 34 49 37 45 39 45 39 49 39 49 32	38 51	30 42	::	31.4 54.5
Lamonte	36	37 55	32 40 33	27 59	28 64	39 68	39 69	37 59	36 48	29 50	68 30 65 29	36 62 32	37 65	46 71	54 77	59 61 56	51 58	38 39	32 42	26 41 27	27 61	31	25 60	29 53	23 35	18 46	22 41	37 45	41 45	34 50 33		34.5 54.4
Marshall	55	37 5 56	33 41	25 59	36 62	38 68	34 59 39 69 35 63	58 37 59 32 59 32 51 34	37 53	29 50 38 62 28 61 30 67 25	29 68	32 62 34	36 67	52 70	48 79	56 69	38 61	36 43	31 42	27 40	31 61	33 57	25 59	33 50	19 40	18 47	33 41	39 45	41 45 40 45 39 49 43 55 42	33 44 31		34.8 55.6
Nevada	58	38 3 48	41 35 48 31	25 54 27	34 63	35 66	48 59 48 65 32	32 51	36 46	28 61	68 43 66 43 67 44	34 61	33 68	52 72	47 73	69 55 70 56 70 56	39 66	37 41	30 44	40 26 44 25 50 29	28 66	31 53	34 61	38 54	20 42	47 18 42 19 46 17	32 41	39 49	39 49	31 46	::	35.4 55.4
Warsaw Minimum Maximum	45	67	31 48	59 27	37 67	36, 69	48 65	34 68 34	40 55	30 67	43 67	61 32 67 30	42 67	44 73	51 74	56 70	40 70 40	36 48	32 45	25 50	33 62	34 62	$\frac{25}{61}$	34 58	22 45	19 46	34 43	39 49	43 55	46 32 55 34		$\frac{35.9}{60.1}$
Minimum	46	40	33	27	31	35	32	34	35	25	44	30	31	53	52	56	40	37	32	29	31	36	23	38	19	17	32	32	42	34		34.9
Northwest Plateau Chililcothe M Maximum	59		40			64	59	60	41	61	68	60		71	75	57	42	39	42	40	58	48	60	47	39	47	40	42	41	46		52.4
Grant City Maximum	30	43	33 42 31	56	28 61	31 59	59 35 55 46 59 44 57 34 58 49 55 42 57 46 57 40 58 49	29 53 29 55 38 55 29 59 34 50 27	30 49 36	31	33	31 57 36	31 60	39 66	39 66	42 63	40 41 32 44 38 40 38 55 39 43 32 41 52 39	35 35 32 38 34 37 33 40 37 36 32 37 32 37 32 37 34 39 34	42 29 39 29 41 32 40 28 43 31 40 29 44 30 42 31 41 30	40 25 38 25 41 29 38 23 41 28 40 25 47 25 40 28 38 27	58 28 50 32 61 37 55 25 61 34 56 23 59 33 58 87 56 31	48 33 45 32 48 37 45 30 50 34 58 31 49 32 46 33 50 34	24 59	31 51 26	39 15 34 15 36 21 33 15 40 20 34 14	19 44		32 41	38 43 33	28		30.9
Kansas City Maximum	41 55	32	31	26 56 33	36 63	32 63	46 59	29 55	36 49	36 62	67	36 58	38 66	51 69	74	41 63	32 44	32 38	29 41	25 41	32 61	32 48	26 61	26 50	15 36	45	41	42	41	23 50 31	.:	33.0 53.1
Kidder//	43 47 30	33	32 32 34 32 34 34 34	33 49	36 63 41 60 26 62 40 63 37 64 40 63 42 63 36	41 59 33 66 37 60 28 64 33 62 35 62 32	44 57	38 55	49 38 42 30	58 36 62 37 59 33 61 34 60 34 64 36 63 38 57	47 67 45 70 33 69	58 40 56	60 38 66 44 61 33 64	51 69 54 68 37 69 53 67 51 68 53 68 54 65 43	41 74 51 72 40 71 49 69 37 74 44 73 47 66 40	63 44 58	38 40	34 37	32 40	29 38	37 55	37 45	59 26 61 36 58 25 59 30 60 24 64 32 57 25	50 31 44 30 53 36 59	33	44 21 45 26 45 15 41 23 45 20 46	39	33 42 39 42 31	41 35 39 37	44		37.2 49.9
Lexington	53	41 53	32	49 24 56 29 58 24 59	26 62	33 66	34 58	29 59	30 48	33 61	33 69	30 59 36 57 28 61 33 56 36 55 32	33 64	37 69	71	40 72 55 65	38 55	33 40	28 43	23	25 61	30 50	25 59	53	40	15 41	40	31 44 39	37 42 39	44 27 50	::	30.1 54 0
Maryvlile Maximum	44	39	34	29 58	63	37 60	49 55	34 50	48 38 48 36 50 28 47 38 46 36	34 60	44 64	36 57	40 62 38 65 41 64 42 54 36	53 67	49 69	55 65	39 43	37 36	31 40	28 40	34 56	58 58	30 60	36 59	20 34	23 45	40 33 40 33 40 34	39 42 37	41	31 41	::	37.0 51.4
Oregon	41	31	30 5 47 2 29 4 43	24 59	87 64	28 64	42 57	27 63	36 50	34 64	41 69 43 67 45 63	28 61	38 65	51 68	37 74	41 66 42 63 41	32 43	32 37	29	25 47	23 59	31 49	24 64	30 54	14 39	20 46	40	43	41 32 42 35	41 22 49		31.7 54.0
8t. Joseph	42	32	29	27 55	40 63	83 62	46 57	30 58	38 47	36 63	43 67	33 56	41 64	53 68	73	42 63	32 41	32 37	30 42	25 40	33 58	32 46	32 62	32 46	16 34	23 46 25	34 40 35	39 43	35 40	26 46		34.3 51.8
Trenton	50	3 31	31 45 36	27 55 29 51 24	42 63	35 62	40 58	63 30 58 33 49 33	38 46	38 57	45 63	36 55	42 54	54 65	47 66	41 60 52	34 52	34 39	31 41	28 38	87 56	33 50	32 57	28 50 34	16 34 18 34 18	25 48	38	40 38 35	40 32 40 35	28 41 29	• •	35.3 50.4
Minimum	42	38	36	24	36	32	49	33	36	32	40	32	36	43	40	52	39	34	30	27	31	34	25	34	18	19	33	35	35	29		34.1

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it aimost always occurs.

WBO, St. Louis, 12-14-28-925.

Nat Harr

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU. CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

MISSOURI SECTION.

GEORGE REEDER, Meteorologist.

No. 12. Vol. XXXII. Columbia, Mo., December, 1928.

GENERAL SUMMARY.

December, 1928, was mainly a mild month in all Missouri, a small deficiency in the southeastern lowlands and somewhat larger deficiency over the northwestern plateau. Deficiency were nowhere serious, and, on the other hand were nowhere serious, and, on the other hand were nowhere serious, and, on the other hand were nowhere serious.

when zero was recorded at a few of the more northern stations. There was a warm spell about the middle of the month and another the last week, the 28th being an outstanding with day for winter. The maximum temperature record, at a few stations having relatively short records, was a coverspreading to the stations of the coverspreading to the stations of the coverspreading to the coverspreading overspreading the northwestern part of the State.

For Missouri, as a whole, this was the warmest December since 1923. The extremes of temperature, 0° on the 5th, and 81° on the 28th, were well within those of other years, although the maximum of the current month has never been exceeded by more than 3° in 40 years. The zero cold is relatively mild when compared with the minima of some other Decembers.

The precipitation was well distributed as to time. There was one general rainy day during the first decade, three during the second decade, and two near the end of the month. Such an arrangement permitted much fine, open weather for nearly all outdoor occupations. The snowfall was less than normal. The ground north of the Missouri River was appreciably covered from one to four days, but the snow melted about as fast as it fell south of the river.

On the whole, the month's weather was favorable for outdoor work. Fall sown grains made fine growth, being well rooted. Live stock lived in the open much of the time pasturing on stalk fields, resulting in the saving of much forage; and there was a large saving to the householder because of a minimum

requirement for fuel.

Correction: The November floods were not as destructive to main State highways as first indicated by press news reports, in our November publication. The Missouri State Highways Department at Jefferson City, stated, following a careful survey, that the damage would not exceed \$60,000.

TEMPERATURE.

The monthly mean for the State, 67 stations reporting, was 36.2°, or 2.3° warmer than the normal. Plus departures were nearly the same in all divisions. The coldest weather occurred during the first 7 or 8 days. Outstanding warm spells prevailed from the 11th to the 15th, and during the last seven days of the month. The highest temperature was 81°, at Birchtree and Koshkonong on the 28th, and the lowest was 0°, at Kirksand Downing on the 5th. The average number of days with 32° or lower was 23.

PRECIPITATION.

The average for the State, 98 stations reporting, was 2.24 inches, or about 0.21 inch more than the 56 years' average. The geographic distribution was fairly good. The northwestern section received about 0.50 less than the normal, the southwestern plain about 0.58 more than the normal while the remainder of the State got practically normal. The precipitation was well spaced as to time. It was general on the 4th, 13th to the 17th, and on the last two days of the month. This left much fine weather between the wet days. The heaviest monthly amount was 5.04 inches, at Morehouse, New Madrid County. The next heaviest was 4.63 inches at Lockwood, and 3.10 inches

at Lamar. The greatest amount in any 24 consecutive hours was 3.10 inches at Lockwood. Dade County on the 16th.

The monthly snowfall south and east of the Osage River was inappreciable as a rule. Over the remainder of the State it ranged from 1 to 4 inches; in Adair, Macon, Randolph, and Charitan Counties it was as much as 5 to 7 inches. However, all melted within a few days.

PRESSURE, HUMIDITY, SUNSHINE, AND WIND DATA.

	tn pressure (vel)	Me rela humi	tive	Suns	hine		١	Wind		
a	an pre evel				4)	1 00	our.	Ma	k. velo	city
Stations	Mean barometric pr (Sea-leve	7 a. m.	7 p. m.	Total hours	Percentage of possible	Total move- ment miles	Average hour. ly velocity	Miles per hour	Direction	Date
Columbia	30.12 30.13 30.13 30.12 30.14 30.15 30.16 30.12	82 82 78 84 77 83 82 82	70 66 70 66 65 66 75	170 161 131 166 160 151	58 55 45 57 54 52	5,369 5,574 6,989 5,635 8,030 7,004 5,497 4,948	7.2 7.5 9.4 7.6 10.8 9.4 7.4 6.7	23 31 32 28 36 32 29 34	W. SW. W. nW. SW. nW. S. W.	2 2 2 3 26 26 26 26 3

Beginning January 1, 1928 wind velocities are by 3-cup anemometers.

COMPARATIVE DATA FOR DECEMBER.

		Temper	ature			Precipita	ation		Nur	nber	of d	lays
Year	Mean	Departure	Highest	Lowest	Mean	Departure	Greatest in 24 hours	Total snowfall, unmelted	With .01 inch or more	Clear	Partly cloudy	Cloudy
1888. 1889. 1890. 1891. 1892. 1893. 1894. 1895. 1896. 1897. 1898. 1899. 1900. 1902. 1901. 1902. 1904. 1905. 1907. 1908. 1909. 1910. 1911. 1912. 1918. 1918. 1919. 1918. 1919. 1918. 1919. 1921. 1922. 1922. 1923.	36. 0 39. 8 29. 4 35. 2 36. 7 34. 3 38. 6 29. 3 28. 7 30. 4 35. 6 28. 5 30. 7 30. 2 32. 9 33. 3 36. 1 7 38. 4 24. 9 31. 2 24. 9	+1.7 +12.6 +1.8 +5.6 -4.8 +1.0 +2.5 +0.1 +4.4 -4.9 -5.5 -8 +1.4 -1.3 -0.9 +1.9 +3.5 +2.9 -9.3 -3.5 +2.5 +2.3 +2.5 +2.3 +2.5 +2.3 +2.5 +2.3 +2.5 +2.3 +2.5 +2.3 +2.5 +2.3 +2.5 +2.3 +2.5 +2.3 +2.5 +2.5 +2.5 +2.5 +2.5 +2.5 +2.5 +2.5	70 76 76 76 76 76 76 76 69 77 4 74 74 72 68 66 66 67 75 76 68 68 82 82 80 82 82 80 77 74 74 74 74 74 74 74 74 74 74 74 74	0 0 2 3 4 1 1 2 2 7 7 8 8 6 6 4 4 4 2 9 2 9 2 1 1 1 1 1 2 9 1 2 1 2 1 1 1 1	2.29 2.29 1.096 1.03 1.90 2.38 0.95 2.11 0.69 2.91 1.50 0.21 1.50 0.52 2.91 1.50 0.52 2.91 1.50 0.52 2.91 1.50 0.52 2.86 0.93 2.87 1.84 0.95 2.86 0.95 1.87	+0 24 -1.09 -1.02 -0.15 +0.33 -1.10 +0.08 +4.08 -1.12 +0.75 -0.36 +0.06 -0.55 -0.60 -0.55 -0.60 +0.81 -0.81 -0.81 -0.81 -0.80 +0.12 -0.21 -1.20 +0.81 -0.80 +0.12 +0.12 -0.21 -1.20 +0.81 -0.80 +0.12 +0.12 -0.21 -1.20 +0.81 -0.80 -0.55 -0.60 +0.12 -0.21 -1.20 +0.81 -0.80 -0.55 -0.60 +0.10 +0.10 -0.55 -0.60 -0.50 -0			653665583759488855487388473796657356687466		11888886987477666776566776477666755	16 9 9 14 10 15 8 10 12 17 8 13 10 12 15 11 11 15 11 15 11 15 11 11 15 11 15 11 16 17 17 17 18 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 18 18 18 18 18 18 18 18 18 18 18 18

1928......362 +2.3 81 0 2.24 +0.21 3.10 1.4 5 14 6 11

	Climatological	Data	for	December.	1928
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					Clir	natol	ogica	l Dat	a for	De	cemb	er, 19	28							
					Tempera	ture, l	n degr	rees Fa	hr.		Preel	pitation	, lu lu	ches.	Nun	nber	of d	аув.	uo	
Stations.	Counties.	Elevation, feet.	Length of record, years.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	With precip	Сеяг.	Partly cloudy.	Cloudy.	Prevailing direction of wind.	Observers.
Northeast Plain Brunswick Clifton Hill Columbia Downing Pnyette Fulton Gorin Hannibal Jefferson City Kirksville Lonisiana Maeon Mexico Monroe City St. Louis (1) St. Louis (2) Shelbina Stellenville Unionville Warrenton Keokuk, Iowa Section means and	Chariton Randolph Boone Schuyler Howard Callaway Scotland Murion Cole Adair Pike Macon Audrain Monree St. Charles St. Louis City do Shelby Lewis Putnan Warren Lee, la extremes	652 731 784 876 661 818 700 534 557 800 748 456 568 578 779 650 1,062 816 614	48 28 37 6 47 39 40 35 39 38 38 6 39 53 15 34 45 55	34.0 34.2 36.2 32.4 33.9 35.8 34.8 32.2 35.4 ^a 32.8 32.8 34.6 38.1 38.6 37.8 33.6 32.0 33.0 35.0	+ 3.4 + 3.1 + 3.0 + 2.7 + 2.1 + 5.4 + 2.4 + 2.8 + 3.2 + 3.2 + 3.5 + 3.6 + 4.6 + 4.6 + 6.4 + 3.4 + 3.4	55 58 66 54 64 70 56 51 60 54 63 68 75 75 75 75 73 73 52 76	131 28 28 28 28 29 28 28 28 28 28 28 28 28 28 28 28 28 28	10 4 14 0 7 11 11 11 11 10 11 4 10 16 16 16 16	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	32 30 29 30 36 40 29 43 58 35 35 35 35 35 35 35 35 43 43 43 44 44 44 45 46 46 46 46 46 46 46 46 46 46 46 46 46	2. 08 2. 56 2. 04 1. 77 1. 98 1. 81 1. 71 1. 92 1. 84 2. 42 2. 30 2. 18 2. 22 2. 22 2. 190 2. 18 0. 85 1. 84 1. 85 1. 96	$\begin{array}{c} +0.46 \\ +11.16 \\ +0.03 \\ +0.03 \\ +0.35 \\ -0.11 \\ +0.02 \\ +0.27 \\ -0.01 \\ +0.78 \\ +0.10 \\ +0.78 \\ +0.05 \\ \dots \\ 0.00 \\ +0.01 \\ -0.08 \\ +0.29 \\ +0.62 \\ -0.79 \\ -0.29 \\ -0.29 \\ -0.29 \\ -0.20 \\ -0.21 \\ -0.40 \\ +0.21 \\ \end{array}$	0.83 0.91 1.07 0.90 0.90 0.99 1.33 1.10 1.20 0.90 1.14 1.22 0.90 0.97 0.77 1.01 0.98 0.55 0.083 1.33	7.0 5.1 2.1 4.0 0.6 2.5 5.8 1.0 0.5 5.0 3.0 8 1.0 0.5 5.0 2.5 4.0 2.5 3.0 2.5 4.0 2.5 4.0 2.5 4.0 2.5 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	6 9 8 6 5 9 5 7 4 5 2 5 5 6 5 8 8 5 4 2 7 6 6	14 11 10 14 8 15 13 14 13 14 11 19 9 12 14 13 11 12 11 12 11	4 9 9 6 6 6 6 10 1 8 8 11 0 11 6 7 7 8 8 5 7 7	13 11 12 11 12 11 7 10 12 7 7 17 54 9 12 11 13 11 11 11 11 12 11 11 11 11 12 11 11 11	se. sw. sw. sw. n. sw. sw. se. se. se. se. sw. sw. sse. sw. sw. sw. sw. sw. sw. sw.	O. K. Benecke Dr. A. J. Bradsher U. S. Weather Bureau James Taylor J. D. Settle Chamber of Commerce J. W. Pulham U. S. Weather Bureau Mrs. Frank Kliegel Prof. J. S. Stokes Stark Bros. Nurseries W. C. Brown Mrs. Abbie Snoddy J. S. Conway L. C. Sneger U. S. Weather Bureau St. Louis University J. C. Jewett Frank Hall Geo. W. Davis Prof. A. W. Ebeling U. S. Weather Bureau
Southeast Lowlands Campbell Caruthersville Doniphan Jackson Marble Hill Morehouse Poplur Bluff Sikeston Cuiro, Ill. Section means and	Dunklin Pemiscot Ripley Cape Girardeau Bollinger New Madrid Butler Scott Alexander, III extremes	314 265 344 428 470 289 339 318 358	2 31 23 36 32 26 23 22 52	39.6 43.6 38.8 37.5 37.8 38.5 40.8 40.6 39.6	+ 3.6 + 1.4 + 0.9 + 1.6 	72 71 73 66 67 70 71 67 73	27† 28 29 28 28 28 28 28 29	15 22 15 15 14 14 20 21 14	8 9 6† 6 9 6† 8 6†	38 33 47 41 39 43 38 30 47	3.71 4.61 3.00 3.48 4.18 5.04 3.00 3.28 3.26 3.73	+0.17 -0.33 +0.28 +0.85 +1.03 -1.18 -0.73 -0.14 -0.01	2. 10 1.98 1.15 1.10 1.12 1.83 1.06 1.78 1.51 2.10	0 0 0 0 0 0 0 0 0 T.	6 6 7 7 7 7 6 4 8 6	13 15 17 14 11 17 22 16 14 16	5 4 8 2 6 4 1 6 7 5	13 12 6 15 11 10 8 9 10 10	n. n. sw. s. n. nw. w. sw. s. n.	Jeff King Sam Smith W. W. Martin John G. Pulz R. A. DeWitt John A. Spence J. H. Wolpers Glen R. Fisher U. S. Weather Burean
Ozark Plateau Areadia Aurora Birehtree (near) Bolivar Dean if Eldon Farmington Goodland Greenville Hailey Koshkonong Lebanon Lockwood Mountain Grove(near) Neosho Rolla Salem(near) Seligman Seymour (near) Springfield Section means and	lron Lawrence. Shannon. Polk McDonald Miller St. Fruncols. Iron Wayne Barry. Oregon. Laclede Dade Wright Newton. Phelps Dent. Barry Webster Greene extremes	931 918 1,000 381 1,350 958 1,265 1,078 1,463 1,011 1,099 1,173 1,542 1,642 1,324	46 37 32 33 30 31 16 33 5 2 26 39 21 26 39 27 23 25 21 39 27 23 39 21 21 22 39 21 21 22 39 21 21 21 21 21 21 21 21 21 21 21 21 21	36.1 39.6 38.6 38.7 36.0 38.1 37.3 36.0 40.4 35.8 39.7 36.6 39.4 36.8 39.4 39.2 38.2 38.2 37.9	+ 1.8 + 4.5 + 2.8 + 1.3 + 1.1 + 2.9 + 0.8 + 4.2 + 2.3 + 2.7 + 3.2 + 2.2 + 2.6 + 3.8 + 3.8 + 2.5	70 76 81 76 63 73 79 70 81 78 74 66 75 79 79 66 77 75 81	28 28 28 2 28 28 28 28 28 28 28 28 28 28	14 16 14 12 12 12 11 11 11 11 11 12 11 11 12 11 11	5† 8 .8 5† 56 9 .8 5† 5 8 8 8 8 8 5 5 5†	42 38 52 45 43 36 59 49 37 36 40 50 42 43 40 33 59 40 59 59 59 50 50 50 50 50 50 50 50 50 50	2.44 2.27 2.63 1.48 2.04 2.33 3.54 1.03 2.39 1.99 1.80 1.70 2.88 3.48 2.70 2.57	-0.54 -0.37 +0.06 -0.12 +0.13 -0.15 -0.55 +0.21 +2.69 +0.16 -0.55 -0.27 -0.31 +1.43 +0.03 +0.16	0.77 0.90 0.90 1.05 0.85 0.75 0.85 1.03 1.35 1.80 0.65 0.71 0.90 1.14 1.68 3.10	T. T. 0 T. T. T. T. 1.0 T. 0.6 0.1	$\begin{array}{c} 645 \\ \cdot 44766 \\ 166574567575 \end{array}$	22 13 19 19 16 14 15 20 12 20 20 4 15 13 15 15 16	9 10 2 5 7 9 4 1 1 8 4 4 2 5 3 3 17 8 10 4 5 6 6	0 8 10 7 8 8 12 10 11 11 11 9 9 8 8 12 10 8 11 11 11 11 19 9 8 10 10 8 10 10 10 10 10 10 10 10 10 10 10 10 10	e. sw. sw. s. sw. n. nw. sw. nw. nw. nw. nw. nw. nw. sw. sw. sw. sw. sw. sw. sw. sw. sw. s	Arendia College W. T. Treughton V. H. Kirkendall Southwest Baptist College H. E. Dean E. H. Shepherd Robert Forsyth F. M. Adams Wm. P. Owens A. W. Madison R. M. Hitt Mrs. Lou Muleare C. S. Crow Mo. Fruit Exp. Sta. U. S. Fisheries Sta. F. H. Lane A. C. Leech Floyd E. Fawver Ira H. Hailey U. S. Weather Bureau
Southwest Plain Appleton City Centerview Clinton Harrisonville Lamar Lamoute Marshall Nevada Warsaw Section means and	St. Clair Johnson Henry Cass Barton Pettis Saline Vernon Benton extremes	853 872 765 904 980 867 779 862 687	33 40 34 50 40 26 38 34 27	37.8 35.0 ¹ 39.3 ⁵ 31.8 37.6 36.8 39.0 40.8 37.5	+ 3.5 + 1.6 + 4.9 + 3.6 + 2.4 + 2.6 + 5.2 + 5.1 + 6.0 + 3.9	66 72 66 64 74 62 62 67 75	28 28 28 28 28 28 28 28 28 28 28	13 16 10 15 12 9 14 11	5 5 5 5 5 5 5 5 5 5 5 5 5	31 42 36 41 46 32 29 27 38 46	2.55 1.95 2.88 1.72 3.10 2.49 1.92 2.18 2.86 2.41	+0.91 +0.15 +1.15 -0.06 +1.15 +0.83 +0.26 +0.32 +0.54 +0.58	1.24 1.75 0 80 1.95 0.86 0.70 1.00 0.80 1.95	1.0 4.0 1.0 1.5 T. 4.0 3.5 3.0 1.0 2.1	5 3 6 4 6 6 4 6 4	8 61 13b 7 16 9 16 16 16 11	15 9i 5b 4 5 13 1 7 8	8 6 ^j 11 ^b 20 10 9 14 8 12 11	SW. SW. S. SW. SW. SW. SW. SW. SW. SW.	W. G. Bigelow E. A. Markey A. E. Derwent, M. D. John H. Patterson Jesse A. Mann J. E. Wbeeler Dr. W. H. Black George A. Kampb Everett Martin
	Nodaway Holt Buchunan Atchison	856 1,134 963 1,020 1,095 688 1,169 1,048 967 916 822	18 38 7 23 38 34 2 42 37 71 19 24 31	32.0 ⁴ 32.2 33.00 34.8 32.0 36.6 30.8 36.6 32.3 34.9 34.7 31.0 32.9 33.4 36.2		50 54 53 55 49 57 53 55 51 57 54 50 49	10† 10† 27 16 15† 28 28 11† 15† 27 27 15† 10† 27† 28	6 4 8 7 8 15 5 .: 12 8 11 13 10 7 4	5 5 22 5 5 5 5 5 22 5 22 5 5 22 5 5 5 5	32 32 28 29 27 22 34 30 31 26 31 28 34 59	0.66 0.51 0.42 0.89 0.40 1.83 0.88 0.44 1.87 0.23 0.55 0.50 0.65 0.77	-0.69 -1.14 -0.57 -0.44 -0.76 +0.50 -0.42 +0.15 -0.82 -0.89 -0.60 -0.27 -0.41 -0.51	0.40 0.28 0.35 0.26 0.30 0.66 0.30 0.26 0.72 0.11 0.40 0.34 0.35 0.51 0.72	3.0 2.0 0.8 5.2 1.0 6.1 0.8 1.7 2.6 0.3 0.9 1.3 T. 1.5	3 3 3 6 3 8 4 5 4 3 5 6 3 5 4 5 5 4 5 5 6 3 5 5 4 5 5 6 5 5 6 5 5 6 5 6 5 6 5 6 5 6	9 ^d 17 15 16 12 11 16 13 13 12 12 12 13 10 13	4 ^d 2 2 0 9 8 3 9 11 9 7 7 6 6	12 14 15 10 12 12 12 9 7 10 12 11 14 12	nw. nw. nw. n. se. s. nw w. se. sw. nw. sw. sw. sw. sw.	M. H. Moulton Wm. J. Olenhouse Fr. Adelhelm Hess Fred I. Stiff W. P. Spillman U. S. Weather Burean Linn Terry H. L. Yates Miss Carrie Loomis J. R. Brink Mina Wright U. S. Wenther Burean Albert Volker W. H. Estes

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

Reference letters *, b, o, appearing in the table indicate number of days missing; for example, b, represents two days, etc.

† Also on other dates. †† Received too late to be included in means and summaries. ‡‡ Post-office address of Dean is Anderson.

Stations. Drainage- basins.															cem'																	
basins.	4													I	ay o	f mo	onth	1.														al.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Tot
Northeast Plain Boonvilled Grand Grand Grifton Hill Grand Grand Grand Glifton Hill Ghariton Missouri Downing Mississippi Missouri Fayettel Missouri Go Gorin Mississippi Mississippi Hamibal** do Hermanuff Missouri Jefferson (Lty do Mississippi	T.	.05	.022 .304 .322 .100 .115 .066 .122 .099 .133 .155 .066 .477 .655 .909 .330 .553 .101 .155 .466 .78	.022	.200	TY.	47.			T		.633.555.911.302.655.551.305.644.552.400.300.655.755.644.652.400.300.655.664.652.660.660.660.660.660.660.660.660.660.66	14 .15 .12 .02 .02 .17 .18 .18 .18 .18 .18 .18 .18 .18 .18 .18	7	16 33 .655 .060 .25223 .610	17 1. 15. 833. 353. 223. 200. 988. 200. 988. 200. 1.14. 1.15. 2.10. 1.14. 1.15. 1.1	18 14 1.11 1.12 1.01 1.01 1.01 1.01 1.01 1.01	T. T. T.	T. T. T. T.	T.			.02	.03		.002 .055 .055 .066 .166 .118 T155 .100 .200 	T.	T.			1.84 2.42 2.12 2.18 2.05 0.80 2.22 2.12 2.02 2.18 2.22 2.02 2.18 2.33 3.16 3.18 3.18 4.63 3.28 3.26 2.44 2.27 3.07 3.18 3.18 3.18 3.18 3.28 3.26 3.26 3.36 3.28 3.26 3.36 3.28 3.26 3.36 3.28 3.26 3.36 3.28 3.26 3.36 3.28 3.28 3.26 3.36 3.36 3.36 3.36 3.36 3.36 3.36	
Owensville II Gasconade				.20 .35 .90 .73 .22	.20		T.				.07 T.	.10 T21	.30 .60 .53 .56 1.14	.10 T. .04 .03 T. T.	.25 T.	.65 .30 .49 .71	.90 T. .41 .67 .69	.10					 T	T.		T.	.10				15 T.	1.70 1.80 1.70
Southwest Plain Appleton City Centerview Missouri Clinton Osage. Concordia Missouri Harrison ville} Osage. Jophin Neosho Lamar do Lamante Missouri Marshall do Nevada Osage Osceola do Warsaw do Waverly Missouri	.0.	2		T. T.	T.						т.		.66 1.03 .91 .32 .18 .40 .86	T.		1.21 1.75 2.9 2.52 .68 .72 .70	.45 1.60 T. .95 .80 .15 1.95 .46	T.	т.				T. T.			.05 .01	.15				.15 .34 .10	1.86 1.72 3.17 3.10 2.49 1.92 2.18 2.65
Northwest Plateau Albany do Bethany do Chilicothe do Conception Missonri Edgerton do Gallatin Grand Grant City do Kunsas City*te* Missonri Kidder kl. Grand King City Missonri Lexington do Maryville do Oregon do St. Joseph*** do Tarkio do Trenton Grand				.09 .08 .06 .14 .08 .09							T. T.	T.	.07 .35 .25 .27 .30 .55 .30	T. 23 T. T22 .03	T.	.26 .17 .55 .28	T. 01 T. 11		1.		T.		.01 .02 .04 .01	Ť.		.02				т. Т.	.10 .04 .03 .26 .44 .01 	0.35 0.66 0.51 0.42 0.89 0.75 0.43 0.88 0.44 1.87 0.23 0.55 0.50 0.65

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 21 hours ending at the time of observation.

***Regular U.S. Weather Sursau station; precipitation is for 24 hour period, midnight to midnight.

***Precipitation in the next following measurement; separate dates of fall not recorded.

**Precipitation is for 24 hour period midnight.

						I	aily	7 Te	emp	era	ture	s fo	or D	ece	mbe	r, 1	928	В														
Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 }	21	22	23	24	25	26	27	28	29	30	31	Mean
Northeast Plain Brunswick \$\sqrt{\sq}}}}}}}}}}}} \sqrt{\sqrt{\sqrt{\sqrt{\sq}}}}}}}}} \sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}}}}}}}}} \sqrt{\sqrt{\sq}\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}}}}}}}} \sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}}}}}}}}} \sqrt{\sqrt{\sqrt{\sq}	52 30 51 31 51 25 47 30	59 37 51 25 55	29 42 30 44 26 42	33 29 36 17 33 29 33 15	33 10 33 14 34 7 30 11	42 13 45 23 44 12 43 22	30 20 32 20 33 16 32 20	37 14 35 15 86 10 33 15	47 15 50 25 50 14 46 26	54 25 55 29 56 20 52 23	41 26 52 35 51 20 50 31	48 36 46 38 48 33 45 37	55 37 52 46 53 36 52 43	45 42 46 41 44 38 49 43	55 42 54 42 55 38 53 42	50 42 50 39 49 39 49 36	33 32 39 27 48 29 36 28	42 25 41 25 42 22 41 25	29 21 35 20 30 20 36 21	37 21 37 20 40 18 30 15	31 19 34 20 38 15 26 14	34 14 32 20 38 17 33 17	40 18 39 24 39 18 42 25	35 25 39 24 34 21 46 24	48 21 50 21 49 17 47 25 55	47 222 50 39 49 21 51 39	51 29 50 33 52 28 48 34	48 28 66 40 61 31 56 38	39 29 40 24 42 26 40 25	44 24 42 25 43 18 37 24	39 28 41 24 45 27 40 27	42.4 25.7 44.3 25.0 44.7 23.1 42.6 27.1
Jefferson Clty § Maximum Minimum Maximum Maximum Louislana Maximum Maximum Maximum Maximum Maximum Maximum Maximum Minimum Maximum Minimum Maximum Minimum St. Louis(1) Maximum Minimum Unionville Maximum Minimum Warrenton Maximum Minimum Maximum Minimum Maximum Minimum Minimum Minimum Minimum	60 30 48 26 50 29 48 29 51 31 55 34 44 26 54 29	67 32 51 30 56 29 52 31 58 31 54 36 47 30 58	50 29 46 26 55 30 40 27 44 29 47 35 44 23 54	46 32 31 17 42 29 30 29 34 29 40 25 37 17 45 29	42 11 29 0 33 13 30 4 32 10 29 16 32 3 33 10	49 12 40 2 45 20 39 7 44 12 44 25 40 15 46 22	39 30 8 40 28 29 23 33 24 37 22 38 16 43 26	46 13 31 7 35 11 35 10 34 12 34 18 32 6 35 11	56 18 43 18 40 20 43 12 48 13 49 22 46 18	60 22 50 22 50 24 53 23 54 34 50 18 58 32	57 29 45 31 49 27 50 28 49 36 50 30 54 32	50 36 43 35 45 33 48 32 52 41 44 34 48 37	60 41 47 39 51 37 53 38 56 47 46 36 56 44	47 41 47 38 55 20 45 39 46 41 50 46 46 35 53 43	42 57 40 47 39 52 40 55 41 49 44 50 38 52 42	54 42 47 39 55 45 49 41 48 42 50 44 48 37 50 44	40 30 45 34 52 30 32 30 34 32 48 31 40 28 49 29	40 22 40 27 40 25 39 23 41 23 47 26 45 20 43 23	40 25 41 20 40 25 26 29 27 23 40 24 42 16 40 26	43 19 36 8 33 22 31 18 35 20 39 21 25 16 39 19	44 13 25 16 30 13 29 14 30 16 33 17 24 10 29 14	39 18 21 11 35 18 31 13 32 16 32 20 34 7 29 16	45 21 41 20 45 20 37 16 39 19 45 23 40 20 44 19	50 28 43 19 50 20 44 22 45 24 46 34 42 17 46 28	55 25 44 23 50 20 40 22 48 23 50 34 45 22 51 26	57 24 47 33 55 35 48 34 52 26 53 38 45 32 53 35	52 27 47 29 48 32 46 29 48 31 48 37 50 28 47 32	28 76 33, 50 35 63 30 75 40 50 35 73 35	44 31 41 23 50 32 45 25 38 29 42 30 44 22 69 30	48 21 36 22 40 20 38 29 41 22 41 27 36 20 44 27	42 25 37 27 40	50.2 26.1 40.9 23.4 45.3 40.9 21.6 425.3 40.9 21.6 43.4 25.7 46.3 31.0 41.6 22.5 48.0 28.1
Southeast Lovelands Campbell Maximum	57 30 56 38 60 27 54 26 56 29 57 33 53	26 60 37 61 27 56 27 61 26 55 30	31 59 49 59 31 54 33 59 31 56 34 53	47 29 55 40 50 36 46 31 44 30 50 35 45 36	43 20 46 26 44 20 42 17 39 19 42 22 36 22	45 17 40 24 44 16 42 15 44 16 44 20 40 24	43 21 45 28 41 16 40 20 45 20 42 25 38 24	42 15 38 22 36 16 36 15 39 17 35 20 35 21	17 44 23 43 15 42 15 46 14 51 20	22 58 20 56 24 54	45 24 54 36 50 25 48 23 45 19 49 29 53 34	51 39 61 42 50 34 51 37 43 40 51 40 55 42	64 48 64 50 60 59 45 62 42 61 48 59 50	58 45 63 49 54 46 54 40 52 48 65 48 52 49	55 39 52 48 55 45 50 42 40 60 45 51 44	56 40 53 43 50 40 49 38 50 40 51 44 51 42	52 34 55 41 50 33 52 31 50 33 48 31 52 33	45 25 44 27 46 25 43 24 46 26 45 27 43 29	49 22 50 28 47 21 45 22 46 27 45 30	44 18 42 25 45 17 40 18 46 17 45 23 41 24	48 22 48 27 44 21 42 18 45 20 45 22 45 23	42 22 47 32 40 22 41 23 45 21 44 27 41 28	47 19 47 26 43 17 42 17 44 18 43 25 44 26	52 25 48 38 44 26 45 30 51 29 52 49 35	54 21 54 30 51 21 56 22 54 22 53 20 52 32	58 28 58 37 57 34 54 52 57 28 55 38 56 38	56 30 57 37 56 30 52 38 56 36 56 33 51 37	72 34 71 38 69 25 66 25 70 27 71 33 67 38	72 38 65 41 73 20 65 32 64 36 65 36 60 30	48 25 47 28 63 19 52 17 48 20 56 23 45 26	42 26 46, 33 43 22 44 19 43 23 50 20 44 31	51.8 27.5 52.5 34.6 51.0 26.5 48.9 26.1 50.2 26.8 51.6 30.1 48.6 32.6
Ozark Plateau Arcadia M. Maximum Minimum Birchtree Minimum Eldon M. Maximum Koshkonong Maximum Lebanon M. Maximum Minimum Mountain Grove M. Maximum Neosho Maximum Rolfa Maximum Rolfa Maximum Rolfa Maximum Rolfa Maximum Rolfa Maximum Springfield Maximum Minimum Minimum Rolfa Maximum Rolfa Maximum Minimum Rolfinimum Rol	599 244 566 301 513 513 513 513 513 513 513 513 513 51	24 65 33 61 31 63 30 56 30 63 63 63 63 63 63 63 63 63 63 63 63 63	30 54 28 56 31 50 30 50 32 50 26 56 28 53 21 57 30 50 26 50 50 50 50 50 50 50 50 50 50 50 50 50	45	38 14 41 16 40 18 31 12 35 5 12 40 20 37 9 28 13 43 15 32 13 38 15	47 14 47 23 41 17 47 12 46 15 47 21 46 9 45 11 48 42 19 44 27	35 15 38 24 36 17 35 20 38 26 45 19 34 21 32 23 42 21 39 20 32 23	38 14 40 16 88 14 41 13 38 13 42 42 42 42 42 11 35 12 35 17	14 55 50 20 56 13 48 19 50 20 50 12 51 16 56 23 54 22 52	29 59 22 60 30 57 30 60 29 57 22 58 28 55 28	58 26 54 38 31 52 31 45 32 30 47 36 52 30 47 31 58 52 30 47 31 58 36 51 47 37	54 30 47, 37, 48 37, 50 35, 53, 37, 47, 37, 54, 35, 54, 35, 48, 39, 48, 37, 48, 37, 48, 48, 48, 48, 48, 48, 48, 48, 48, 48	57 40 54 58 45 50 57 45 58 45 57 45 58 45 57 57 45 58 45 57 58 45 57 57 58 45 57 57 57 57 57 57 57 57 57 57 57 57 57	50 44 54 40 48 43 45 41 53 44 45 39 47 39 52 41 50 34 48 40	48 41 49 49 45 55 41 49 42 50 42 51 39 47 39 47 39 47 47 41	48 41 49 46 48 41 48 42 49 40 48 39 60 47 49 46 49 40 48	41 39 49 27 48 29 33 34 46 28 49 31 34 38 31 51 28 49 29 47 26	47, 22, 48, 23, 47, 22, 48, 22, 46, 21, 50, 20, 49, 21, 45, 22, 46, 23, 23	42 22 36 25 43 22 36 23 44 44 44 43 21 41 16 33 21	44 18 44 20 44 17 32 21 42 17 46 18 43 19 43 16 45 15 40 16 42 20	40 15 47 27 47 21 46 21 44 46 20 43 19 44 20 42 18 46 27	37 17 37 24 41 21 34 19 37 20 38 22 31 11 35 16 44 23 37 18 27 23	44 15 44 25 44 16 43 20 45 16 48 19 42 18 49 21 45 19 41 21 45 19 41 21 45 19 45 19 46 19 47 19 48 19 19 19 48 19 19 19 19 19 19 19 19 19 19 19 19 19	44 20 38 27 45 33 44 20 44 32 45 34 40 21 44 27 44 21 40 32	52 19 53 24 52 24 52 25 52 24 52 22 24 52 22 24 52 21 52 21 53 50 21 21 50 21 21 21 21 21 21 21 21 21 21 21 21 21	53 19 50 50 57 55 29 51 26 52 34 55 53 55 53 55 53 53 53 53 53 53 53 53	53 29 55 53 22 54 35 54 35 54 35 54 57 53 36 55 53 36 55 53 36 55 53 36 55 53 36 56 57 57 57 57 57 57 57 57 57 57 57 57 57	70 28 76 45 81 29 56 33 78 29 66 32 75 66 79 29 75 42 42	45 34 65 77 70 33 56 61 32 77 35 43 31 47 70 30 74 32 43 30	45 14 50 22 45 18 48 20 46 16 46 22 40 20 43 17 44 18 45 20 45 17 44 45 46 46 22 46 46 46 46 46 46 46 46 46 46 46 46 46	46 14 45 29 25 43 20 40 29 41 28 45 20 41 27 45 29 41 27 45 45 29 41 45 45 45 45 46 46 46 46 46 46 46 46 46 46 46 46 46	$\begin{array}{c} 48.1 \\ 24.1 \\ 49.8 \\ 29.3 \\ 49.5 \\ 27.6 \\ 546.7 \\ 26.5 \\ 48.4 \\ 27.8 \\ 29.6 \\ 46.8 \\ 24.8 \\ 25.7 \\ 52.6 \\ 26.2 \\ 48.6 \\ 25.0 \\ 46.6 \\ 29.5 \end{array}$
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^{*,} b, c. etc., indicate respectively 1, 2, 3, etc., days missing from the record.

* Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU. CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

MISSOURI SECTION.

GEORGE REEDER, Meteorologist.

VOL. XXXII. COLUMBIA, MO., YEAR, 1928.

No. 13.

GENERAL SUMMARY.

The prevailing tendency to mild and open weather of the winter and the early spring months, the late April frosts, and the excessive rainfalls of June and November, were the outstanding features of the weather conditions in Missouri during the year 1928. There were no extensive damaging wind or hail year as a whole was highly favorable for farmers and practically all outdoor occupations.

The mean temperature for the year was 55.2°, which compares closely with the 40 years' normal. The highest temperature of the year was 102° on July 21, at Clinton, Henry County. The lowest temperature was -18° on January 2, at Louisiana, Pike County. Zero to subzero temperatures occurred on a few days during the first part of January, and on one or two days in February. The temperature reached the freezing point or lower, (32°F) on 105 days. Twenty-three of those days were in January and in December, twenty-one in February, eighteen in March, eight in April, and twelve in November. The temperature reached 90° or higher on 37 days, one day in May, two in June, fourteen in July, fifteen in August, three in September, and two in October; and 100° or higher occurred at a few stations on one day in July.

The total precipitation was 45.59 inches, or 5.26 inches more than normal, and 8.60 inches less than the record breaking wet year of 1927. The greatest local annual amount was 67.40 inches, at Marble Hill, Bollinger County. The wettest month of the year was June, with 11.17 inches for the State as a whole, and more than double the normal. The heaviest local monthly amount was 22.00 inches in June, at Jackson, Cape Girardeau County. The driest month of the year was January, with only 0.87 inch, or more than one-half less than the normal. The seasonal snowfall (November to March) was 7 inches,

for the State as a whole. The top of the Ozarks and a few central and northern stations received more than 10 inches. greatest local seasonal fall was 22 inches, at Rolla, Phelps

County.

For the State as a whole, January, February, March, October, and December were unusually mild months. The first five months of the year averaged more than 10° warmer than the normal. Both June and September were decidedly cool for hot weather months. July, August, and November had nearly normal temperatures. January, March, May, and July were more than three inches drier than normal; February, April, August; and September were wetter than normal, and June and November were the wettest in the annals of Missouri climatology for a summer and fall month. The first five months combined were more than 3 inches drier than normal, but the June rainfall wiped this out and gave a large excess, and a large accumulative excess continued to the end of the year. The June rainfall alone was within 1.15 inches of the combined totals of the preceding five months; and the total for November equaled the combined totals of October and December.

The sunshine averaged about normal, the large number of bright days of October and December more than balanced the cloudy weather of November. As usual the prevailing winds

were from southerly points.

THE WEATHER BY MONTHS.

JANUARY.—Considering the month as a whole, the prevailing weather was relatively mild and dry in all Missonri. The first

four days were of the real winter type, when minimum temperatures ranged from a few degrees above zero to several degrees below, -18° being the lowest, at one station, Louisiana, Pike, County. Both rain and snow were scanty in all sections, but especially in the northwestern plateau where a number of stations, had less than 0.10 of an inch to inappreciable monthly totals. Meat was damaged locally by the first few days cold; also peach buds. Traffic and general business was favored by the open weather.

This month continued the fine weather of the

preceding month of January, being mainly mild though some. storms during the year and, despite some adverse conditions such as late April frosts, and floods in June and November, war as a whole was highly for the same time it was the first plus moisture departure since 1015. State, on the 18th, and on the 24th. The highest temperature for the month was 71° on the 11th, and the lowest was -2° on the 24th. The precipitation, while generally sufficient for needs, was unevenly distributed, being more than the normal in northern and less than normal in southern sections. The snowfall was rather light. In a few localities appreciable depths remained on the ground two or three days. Owing to much thawing and consequent soft ground there was little farm activity. Much late sown wheat in eastern and southern parts was winter killed.

> MARCH. — A month noticeable for small rainfall, small snowfall, and bright sunny skies. There were some temperature contrasts but the month was mainly mild. The first five days were the coldest and minima ranged from 20° to 10° above zero, and the month closed with night values around the freezing point. Real summer-like weather prevailed for several days beginning on the 21st, with day temperatures ranging well into the 80s. For much of the State it was one of the driest first spring months of record. There was a heavy snowfall over most of the Ozarks about the middle of the month, the beginning of the storm being a mixture of rain, sleet, and snow. Twenty-four hours later it was nearly all gone. The weather was unusually favorable for outdoor occupations. Oats seeding was completed, and much plowing was done. Fall sown grains did well. The warm weather was unfavorable for peaches, forcing the buds too much.

> APRIL.—The prevailing mild weather of March overlapped the first four days of April in all Missouri, but a reaction to below normal temperatures followed on the 5th to the 7th that persisted practically nearly the remainder of the month. A general freeze on the 8th, and 9th, and again from the 13th to the 15th, seriously injured most tree fruits, which had been forced beyond the seasonal state by the warm March. month was remarkably free from damaging wind, hail, and excessive rain storms. The precipitation was unevenly distributed, being far too much in the southeastern lowlands, and rather short in central and northern sections. Much plowing was done, but the cool weather, and lack of sufficient moisture over more than the northern half of the State, and too much in other sections rather adversely affected most vegetation and

> May.—Quite a favorable month from the temperature side, and, except local wind storms in Atchison, and Cass Counties on the 15th, was free from storm damage of any kind. There were no injurious frosts. The established tendency to scanty precipitation over most of the State in March and April continued in May. However, with some generous and well distritributed showers about the middle and near the end of the month vegetation showed no serious setbacks. The weather largely favored outdoor occupations and especially farm activities, corn planting being finished with soil in good shape.

(Continued on Page 53.)

Climatological data for Year, 1928

			1	femper		(Degrees F	-				recipita'	tion (i	nches)	R I	1	N	umber	of day	y .	-
Stations	Counties	Elevation, feet	Length of record, yrs.	Annual mean	Highest	Date	Lowest	Date	Length of record, yrs.	Total	Greatest monthly	Mouth	Least monthly	Month	Total snowfall	With precip.	Clear	Partly cloudy	Cloudy	Prevailing direction of wind
Northeast Plain. Brunswick Clifton Hill Columbia Downing Fayette Fulton. Gorin. Hannibal Jefferson City Kirksville Louisiana Macon Mexico Monroe City St. Charles St. Louis (1) St. Louis (2) Shelbina Steffenville Warrenton Keokuk, Iowa Section means and	Chariton Randolph Boone Schuyler Howard Callaway Scotland Marion Cole Adair. Pike Macon Audrain Monroe St. Charles St. Louis City do Shelby Lewis Putnam Warren Lee, Iowa extremes	652 731 784 878 661 818 700 534 557 969 875 800 456 717 578 650 1,062 1,062	50 30 39 8 49 40 41 40 35 30 40 41 55 17 	54.0 53.3 54.8 52.7 63.3 54.5 55.8 52.7 53.0 54.1 55.8 52.7 53.0 54.1 55.8 52.7 53.0 54.1 55.8 52.7 53.3 54.5 52.7 53.3 54.5 52.7 53.3 54.5 52.7 53.3 54.5 52.7 53.3 54.5 52.7 53.3 54.5 52.7 53.3 54.5 52.7 53.3 54.5 52.7 53.0 54.1 55.8 56.8 5	97 95 94 96 95 95 95 98 96 98 97 96 94 98 98	July 5† Aug. 16 July 5 July 20 July 5† July 20 July 19† Aug. 4 Aug. 4 Aug. 2 July 3† July 19 July 19 July 5† July 3† July 21 July 19 July 18 July 18 July 18 July 3† July 3† July 3† July 3† July 3† July 3† July 3† July 3† July 3† July 3† July 3† July 3† July 46 July 21†	-13 - 9 - 8 -12 -12 -12 -10 - 9 -18 - 12 - 10 - 8 - 5 - 6 - 12 - 10 - 10	Jan. 2 Jan. 11 Jan. 1 Jan. 1 Jan. 2 Jan. 1 Jan. 2 Jan. 1 Jan. 2 Jan. 1 Jan. 1 Jan. 1 Jan. 1 Jan. 1 Jan. 1 Jan. 1 Jan. 2 Jan. 1 Jan. 1 Jan. 2 Jan. 1 Jan. 1 Jan. 2 Jan. 1 Jan. 1 Jan. 2 Jan. 1 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2 Jan. 2	39 20 46 37 42 45 45 47 48	43.19 41.84 43.07 53.81 41.52 36.19 42.30 32.18 35.05 40.58 40.48 40.48 42.88 40.48 35.61 35.61 35.63 42.48 5.21 36.81	9.59 7.58 14.86 12.74 10.14 10.02 6.35 5.08 8.80 8.22 8.15 7.96 7.25 7.36 7.25 7.30 10.70 6.91 10.70 6.91 14.86	June June June June June June Spt. June Nov. Nov. June June June June June June June June	0.17 0.27 0.69 0.03 0.67 0.70 0.27 0.41 0.55 T. 0.30 0.25 1.09 0.48 0.92 1.70 0.26 0.30 0.08 0.87	Mar. Jan. Mar. Jan. Jan. Mar. Jan. Jan. Jan. Jan. Jan. Jan. Jan. Jan	10.2 7.6 8.6 9.5 4.1 6.0 5.7 9.8 11.8 7.5 6.4 9.3 8.0 11.0 10.0	101 101 110 95 94 112 86 107 93 101 97 75 163 109 99 82 89 92 96 95	196 186 149 188* 105 132 147 212 201b 173 243 190 151 156 176 170 159 135 135 170	26 84 104 91• 193 86 100 79 46: 103 12 90 100 103 93 128 82 118 82 91	144 96 113 82* 68 148 119 75 117 90 111 86 115 107 97 78 114 89 149 149	SW. S. W. N. N. N. SW. W. Se. Se. Sw. SW. SW. SW.
Southeast Lowlands. Campbell Caruthersville Doniphan Jackson Marble Hill Morehouse Poplar Bluff Sikeston Cairo, Ill Section means and	Dunklin Pemiscot Ripley Cape Girardeau. Boilinger New Madrid Butler Scott Alexander, III extremes	314 265 344 428 470 289 339 318 359	3 33 25 38 34 25 23 54	57.6 57.2 55.6 56.9 57.8 57.9 57.5	97 98 97 95 97 96 96 94 98	Aug. 15† July 6 July 6 Aug. 9 July 20 July 5† Aug. 16† July 4 July 6	- 5 - 4 - 6 - 5 - 6 - 3 - 2 - 6	Jan. 3 Jan. 3 Jan. 1 Jan. 1 Jan. 3 Jan. 2 Jan. 1 Jan. 1	3 33 25 39 35 8 25 28 57	53.86 58.18 60.84 67.40 57.98 57.54 45.88 59.55	13,11 10,90 12,90 22,00 20,70 17,16 14,93 16,88 15,70 22,00	June June June June June June June June	1.42 0.22 1.01 0.07 0.00 0.16 0.67 0.14 0.14	July Sept. Sept. Sept. Sept. Sept. Sept. Sept. Sept.	0.0 0.0 3.0 6.0 T. 0.2 1.0 T. 0.4 1.2	98 90 102 92 103 95 115 99	165 164 108 168 217° 214 	93 141 89 88 66° 69 108 93	108 	n. s. sw. n. n. sw. w. sw. sw. sw. sw. sw.
Ozark Plateau. Arcadia Aurora Birchtree(near). Bolivar Dean Eldon Farmington Goodland Greenville Hailey. Koshkonon Lebanon Lebanon Lockwood Mountain Grove(near) Neosho Rolla Salem(near) Seymour(near) Springfield Section means and	Iron Lawrence Shannon Polk McDonaid Miller St. Francis Iron Wayne Barry Oregon Laclede Dade Wright Newton Phelps Dent Barry Webster Greene extremes	926 1, 370 1, 000 1, 071 1, 000 1, 071 934 918 1, 000 381 1, 350 958 1, 265 1, 078 1, 463 1, 011 1, 099 1, 173 1, 542 1, 642 1, 350	28 34 35 26 33 18 35 6	53.3 56.8 56.1 59.0 54.9 55.2 54.5 57.7 53.8 56.8 55.2 57.2 64.3 58.2 57.2 55.6 55.2 57.6 55.2 57.6 55.2 57.6 57.6 57.6 57.6 57.6 57.6 57.6 57.6	91 92 93 96 96 95 94 95 94 96 93 96 93 93 92 92	July 4 July 3 Aug. 16 July 20 Aug. 16 July 5 Aug. 8 July 5 Aug. 8 July 20 July 20 July 20 July 19 Aug. 8 July 19 July 19 July 19 July 19 July 19 July 19 July 19 July 19 July 19 July 20 July	- 8	Jan. 1† Jan. 1† Jan. 1 Jan. 1 Jan. 1 Jan. 1 Jan. 3 Jan. 3 Jan. 1	39 35 30 29 32 36 7 4 28 33 80 46 45 28 26 23 41	47.72 55.58 50.90 	14.04 18.07 13.56 14.45 13.67 8.74 13.94 11.24 19.31 11.76 13.45 14.51 13.38 8.18 10.91 14.77 16.69 12.27	June June June June June June June June	0.25 0.60 1.35 0.46 0.61 0.64 0.11 0.69 0.02 0.40 0.58 0.54 0.30 0.14 0.45 0.51 0.51 0.51 0.51	Sept. Jan. Sept.	5.0 5.7 4.0 1.9 8.3 12.0 11.0 T. 10.5 11.7 5.0 5.1 21.8 13.1 5.0 4.5 13.9 8.2	89 83 84 80 101 90 62 90 99 73 107 97 88 74 106 89	263 186 222 256 93k 139 179 217 152k 207 208 195 239 173a 184 204 218 196	19 87 55 36 175 ^k 148 81 71 777 ^k 68 70 94 61 112* 90 77 77 83	84 93 89 	Se. SW. SW. SW. SW. SS. W. SS. NW. SE. NW. SW. SW. SW. SW. SW. SW. SW. SW.
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[†] Also on other dates.

a, b, c, indicate the number of days missing from records, a, 1; b, 2; e, 3; etc.

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	Jan	uary	Feb	ruary	Mai	rch	Ap	ril	Ma	y	Ju	ine	Ju	ly	Aug	rust	Septe	mber	Oct	ober	Nove	mber	Dece	mber	Anr	nual
Stations	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure
Northeast Plain. Boonwille Brunswick Clifton Hill Columbia. Downing Fayette Fulton. Gorin Hannibal Hermann Jefferson City Kirksville. Louislana Macon Mexico Milan Monroe City Pracific. St. Charles St. Louis(1) St. Louis(2) Shelblina Steffenville Union Unionville. Warrenton Southeast Lowlands Campbell Cape Girardeau Caruthersville Dexter. Doniphan Jackson Marble Hill Morehouse New Madrid Poplar Bluff Sikeston. Areadia Aurora. Birchtree (near) Bolivar Caplinger Mills Dean Birchtree (near) Bolivar Caplinger Mills Dean Goodland Greenville Hailey. Koshkonong Lebanon Lockwood Mountain Grove Neosho Owensville Rolla Salem(near) Selegman Seymour (near) Springfield Steelvillc Stover Tuscumbia Willows Plain Appleton City Centerview Clinton Condodia Harrisonville Jophin Lomar Lamonte Marshall Nevaeda Ovensa	0.56 0.22 0.22 0.90 0.60 0.87 0.22 0.44 1.60 0.22 0.32 0.42 1.00 1.60 0.22 0.32 1.00 1.60 0.22 0.32 1.00 1.60 0.22 0.32 1.00 1.60 0.60 1.60 0.60 1.60 0.60 1.60 0.60 1.60 0.60 1.60 0.60 0	-1.23	1.33 2.2.10 2.0.10 2.0.	1	1.200 1.27 0.47 0.47 0.47 0.47 0.69 0.70 0.93 0.96 0.55 0.69 1.56 1.20 2.48 2.06 3.10 2.15 2.15 2.15 2.07 2.16 2.16 2.17 2.17 2.18 2.17 2.18 2.18 2.18 2.18 3.18 3.18 3.18 3.18 3.18 3.18 3.18 3	-1.83 -2.39 -2.18 -2.39 -2.18 -2.39 -2.18 -2.39 -2.18 -2.39 -2.18 -1.18 -2.34 -1.19 -2.55 -1.22 -2.17 -1.11 -1.75 -1.39 +0.11 -1.75 -1.39 +0.11 -1.55 -1.35 -1.51	3.27 2.47 2.50 3.25 3.25 3.25 3.25 3.25 3.25 3.25 3.25	-0.64 -1.01 -1.86 -0.81 +0.38 -1.47 -0.64 +0.65 -1.00 -0.79	1.71 2.2.21 1.74 2.2.21 1.74 2.2.21 1.82 1.29 2.33 2.05 1.31 2.85 1.99 2.33 2.05 2.18 2.19 2.33 2.05 2.18 3.10 3.55 2.18 3.10 3.20 3.31 3.31 3.29 3.31 3.31 3.31 3.31 3.31 3.31 3.31 3.3	-3.52 -2.84 -2.93 -3.12 -2.12 -2.14 -2.94 -2.71 -2.16 -2.23 -2.16 -2.23 -2.16 -2.23 -2.16 -2.23 -2.16 -2.23 -2.16 -2.23 -2.16 -2.23 -2.16 -2.23 -2.16 -2.23 -2.16 -2.23 -2.16 -2.23 -2.16 -2.24 -2.25	9 .77 .58 .14 .86 .67 .7 .58 .13 .17 .18 .07 .18 .10 .17 .18 .18 .10 .17 .18 .18 .18 .18 .18 .18 .18 .18 .18 .18	+4.30 +4.40 +4.40 +3.24 +10.48 +8.36 +5.60 +5.82 +1.56 +7.67 +4.78 +2.52 +1.56 +7.67 +4.78 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.56 +1.52 +1.52 +1.56 +1.52 +1.52 +1.52 +1.56 +1.52 +1.53 +1.54 +1.52 +1.52 +1.52 +1.52 +1.52 +1.53 +1.54 +1.52 +1.54	2.099 2.333 3.72 2.599 2.333 3.72 2.590 1.902 1.666 6.677 2.466 2.77 2.464 1.77 2.764 1.77 2.77 2.77 2.77 2.77 2.77 2.77 2.77	-1.83 -2.16 -1.16 -1.17 -1.18 -1.18 -1.18 -1.18 -1.19 -1.18	9. 63 5. 866 5. 866 6. 055 3. 22 8. 5. 59 9. 6. 33 9. 6. 36 1. 40 1. 4	+5.90 +5.90 +1.97 +2.02 +0.18 +0.23 +0.23 +0.24 +1.97 +2.57 +1.106 +0.65 -1.236 +1.37 +1.38 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.48 +1.91 +1.9	3.727 3.7433 5.463 3.333 5.463 3.633 3.944 4.766 3.233 4.476 3.233 3.944 5.622 7.1.07 0.00 0.14 0.667 0.344 0.660 0.340 0.660	-0.97 +3.04 +3.04 +4.33 -1.20 -2.98 +2.06 +0.46 +0.86 +0.86 +0.45 -0.27 +0.94 -1.65 -1.76 -0.27 +0.94 -2.39 -2.38 +3.99 -2.29 -2.38 +3.99 -2.29 -2.38 -3.48 -3.63 -3.36 -3.37 -2.21 -3.36 -3.37	2.85 3.04 4.58 3.07 2.26 4.50 3.3 44 4.58 3.07 7.13 7.14 5.70 6.16 6.32 7.85 3.97 7.13 3.92 4.40 6.32 6.60 6.32 6.32 6.32 6.32 6.32 6.32 6.32 6.32	+0.00 +0.40	6 6.92 6 7.218 6 8.93 6 6.52 6 7.218 6 6.52 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	+3.88 +3.85 +5.30 +2.37 +3.86 +4.52 +3.90 +0.22 +1.87 +0.65 +1.22 +1.48 +3.35 +5.27 +0.43 +4.62 +1.48 +3.35 +5.27 +0.43 +4.62 +1.48 +3.35 +5.27 +0.43 +1.42 +1.42 +1.43	1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97	+0.066 +1.161 +0.031 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.314 +0.324 +0	44. 28 44. 28 36. 92 34. 0. 58 42. 88 41. 26 63. 28 41. 26 65 8. 18 46. 75 66 63. 28 41. 26 65 8. 18 47. 75 65 68 41. 27 66 69 68 68 68 67 49 68 68 68 68 68 68 68 68 68 68 68 68 68	+4.73 +4.83 +4.22 +6.33 +7.33 -0.66 -0.36 +1.10 -0.13 +4.82 +4.22 +1.10 -0.22 +1.10 +1.10 -0.22 +1.10
Chillicothe Conception Callatin Grant City Kansas City Kidder King City Lexington Maryville Oregon St. Joseph	0.0 1'. 0.1 T'. 0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.0	3 -1.6 -0.9 3 -1.1 -1.1 4 -0.9 1 -0.9 5 -1.2 0 -1.3 5 -1.0 4 -1.3 2 -0.8	3 2.4 5 1 5 1 1.7 9 1.9 2 1.9 2 1.9 2 2.7 2 2.2 2 2.1 7 2.5 3 2.2 2 1.9 2 1.9 2 1.9 2 1.9 2 1.9 2 1.9 3 2 1.9 3 2 1.9 3 2 1.9 3 2 1.9 5 1.	10 +0.39 99 +0.40 33 +0.28 22 +0.32 0 +0.77 7 +0.95 99 +0.77 5	0.96 0.62 0.56 0.86 1.17 0.36 0.64 0.55 0.96 1.17 0.77	5 - 1.82 $2 - 1.13$ $5 - 2.19$ $5 - 1.75$ $7 - 0.94$ $5 - 2.17$ $6 - 2.07$ $6 - 0.92$ $7 - 0.85$ $7 - 1.73$	2.56 2.00 1.99 1.51 1.94 2.32 1.98 2.19 2.34 2.74 2.06	-1.88 -0.81 -1.55 -2.21 -1.12 -0.82 -3.28 -1.17 -0.57 -0.55 -1.00	1.72 2.19 0.78 0.89 1.22 2.34 0.79 1.34 2.40 2.92 2.42 2.08	2 -2.99 -2.58 3 -4.67 0 -4.61 1 -2.31 1 -2.31 0 -4.42 1 -2.66 2 -2.83 2 -2.44 3 -2.21	9.7 9.3 9.3 7.1 8.0 1.6.4 1.5.4	$ \begin{array}{c} 1 + 4.64 \\ 5 + 4.80 \\ 4 + 2.03 \\ 8 + 2.77 \\ 3 + 1.88 \\ 3 + 0.44 \\ 2 + 4.16 \\ 5 \\ 2 + 5.05 \\ 6 + 3.03 \\ 1 + 5.18 \\ 7 + 6.08 $	2.90 4.21 2.3 1.41 7.00 2.6 3.6 2.6 3.20 6.33 4.60 3.19	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1.87 1.87	$ \begin{array}{c} +0.21 \\ +1.35 \\ -1.76 \\ +0.95 \\ +4.70 \\ -1.00 \\ +1.02 \\ +1.65 \\ +1.42 \\ \end{array} $	5.76 6.00 4.5 8.11 4.03 3.12 6.19 6.19 6.5 6.5 8.7	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3.18 4.54 0.79 3.80 5.26 2.64 3.61 5.80 4.51 2.97 2.12 3.51	3 -0.2 +2.0 9 -1.4 0 +1.1 5 +2.5 1 -0.2 +0.9 1 +1.9 7 +0.3 2 -0.4 +0.8	7 8.43 9 7.38 6 5.22 8 6.98 4 5 6 8 8.53 9 7.78 7.53 4 9.13 4 9.13 4 6.48 4 6.99	3 +6.16 3 +6.05 2 +3.76 3 +5.26 4 +4.05 5 +6.75 3 +5.9 3 +7.26 4 +3.36 4 +4.75 8 +5.56	0.50 0.51 0.42 0.89 0.75 0.40 1.83 1.83 1.87 1.87 1.87 1.87 1.87 1.87 1.87 1.87 1.87 1.87 1.87 1.83	-1.14 -0.57 -0.44 -0.77 -0.76 +0.50 -0.42 +0.15 -0.82 -0.89 -0.60	43. 08 43. 21 28. 28 36. 70 39. 63 41. 00 39. 23 43. 58 45. 18 40. 08 44. 11 45. 13	10.7 -8.2 -1.6 +4.8 +3.8 +1.4 +7.5 +8.4 111.5

			Mon	thly	and	Ann	nal M	[ean	Tem	pera	ture	s for	the	Year	192	8, w	ith I	epar	tures	8	,		_			
	Jar	mary	Febr	uary	Ma	rch	Ap	rll	M	ау	Ju	ine	Jı	ıly	Au	gust	Septe	mber	Octo	ber	Nove	ember	Dece	mber	Am	nual
Stations	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure
Northeast Plain. Brunswick Clifton Hill Columbia Downing. Fayette Fulton Hannibal Jefferson City Kirksville Louisiana Macon. Mexico St. Lonis(1) St. Louis(2). Steffenville Unionville Warrenton Keokuk, la Scettheast Loulande	29.4 30.2 30.8 30.2 30.6 30.3 30.9 32.4 29.8 33.6 29.0 30.4 33.5 34.7 33.8 30.2 29.2 33.7 29.5 31.3	+ 2.6 + 1.5 + 3.6 + 3.8 + 4.9 + 5.7 + 2.4 + 2.4 + 5.7 + 4.6 + 3.2	34.2 34.9 36.4 34.6 35.6 35.6 35.8 37.1 33.7 35.2 36.7 37.6 36.4 35.9 37.0 33.9 37.0 33.9	+ 5.1 + 5.7 + 4.7 + 4.4 + 2.9 + 6.1 + 5.8 + 7.9 + 7.4 + 5.0 + 4.2 + 2.6 + 7.9 + 7.1 + 5.9 + 7.1 + 5.9 + 7.5 + 6.5	44.8 43.9 46.0 44.0 43.5 44.0 46.8 43.2 46.0 46.3 45.3 46.0 45.1 45.1 45.2 46.9 42.6	+ 3.0 + 1.7 + 3.4 + 0.4 + 3.6 + 1.7 + 1.7 + 1.5 + 1.5 + 2.2 + 4.7 + 3.7 + 2.7	49.7 49.7 51.2 48.6 49.6 50.8 50.0 48.8 50.2 52.0 48.8 50.2 52.3 50.2 52.3 52.4 49.4 48.6 52.4 52.2 48.7 50.2	- 4.4 - 3.8 - 3.7 - 3.5 - 3.4 - 4.1 - 2.9 - 3.8 - 3.5 - 3.7 - 3.7 - 3.7 - 3.7 - 3.7 - 3.7 - 3.7 - 3.7 - 3.5	65.6 64.8 65.7 61.8 65.0 65.1 64.9 66.8 63.6 65.4 66.0 66.6 66.4 64.1 63.9 66.2 64.8 65.3	+ 1.3 + 0.6 + 1.4 	67.7 666.0 66.6 66.8 66.6 67.3 67.0 67.8 66.7 66.1 68.4 68.6 68.2 66.9 65.7 67.8 66.8 66.8	- 5.55 - 7.00 - 6.2 - 6.3 - 5.5 - 6.8 - 6.6 - 6.6 - 6.7 - 6.3 - 5.8 - 5.7 - 6.2	78.2 75.9 77.2 75.6 76.6 77.8 77.8 77.9 75.9 74.2 77.9 78.2 79.9 79.3 77.1 75.3 77.4 77.3	+ 2.5 - 0.5 + 0.3 - 0.8 - 0.1 + 1.0 - 0.2 - 0.2 - 0.2 + 0.6 + 0.1 - 1.3 - 0.9 - 1.3 - 0.9 - 0.9 - 0.0	77.0 74.8 75.8 75.8 76.0 76.6 77.0 73.6 75.0 73.6 75.6 77.4 77.2 77.6 77.4 76.6 77.2 77.6 77.9	+ 3.2 - 1.4 + 0.2 - 0.5 + 1.6 + 0.3 + 1.0 - 1.4 - 0.7 + 0.3 + 0.5 + 0.1 + 0.2 - 0.1 - 0.8 + 0.6 + 0.9 + 0.2	64.4 62.3 63.8 62.2* 62.7 64.4 63.0 64.8* 62.8 64.0 61.8 63.8 66.2 67.4 66.8 63.8 66.2 67.4 66.8 63.8 63.8 64.0	- 2.3 - 6.6 - 4.4 - 5.6 - 4.5 - 4.5 - 4.3 - 3.2 - 3.2 - 6.5 - 4.8 - 1.7 - 3.1 - 3.4 - 5.3 - 5.3 - 4.8 - 5.3 -	59.9 59.3 60.8 57.2° 69.1 61.3 60.2 63.6 -58.5 -59.2 -62.2 -62.2 -62.2 -62.2 -63.6 -6	+ 4.7 + 2.1 + 4.2 + 2.4 + 3.5 + 3.7 + 1.7 + 2.8 + 2.8 + 2.8 + 2.6 + 6.0 + 3.1 + 3.5	42.9 43.4 44.5 42.4 44.4 44.2 45.4 45.0 41.9 43.2 45.4 46.0 45.2 41.8 45.6 42.9 43.8	+ 1.4 - 0.4 + 1.2 + 0.1 - 0.1 + 2.1 + 1.3 + 1.3 - 1.5 + 0.2 - 0.1 + 0.6 - 1.3 - 1.5 + 1.9 + 0.6 - 1.3 - 1.5 + 0.2 - 0.1 + 0.2 - 0.1 + 0.2 - 0.1 + 0.2 - 0.5 -	34.0 34.2 36.2 32.4 33.9 35.8 34.8 38.2 32.2 32.4 33.6 33.6 33.6 33.6 33.0 33.0 33.0	+ 3.4 + 3.1 + 3.0 + 2.7 + 2.1 + 3.3 + 2.6 + 3.9 + 2.6 + 3.9 + 3.9	54.0 53.3 54.8 52.7 53.3 54.1 55.8 52.7 55.8 56.5 56.5 56.5 56.5 56.5 56.5 56.5 56.8	+ 1.2 - 0.4 + 0.6 - 0.3 - 0.4 + 1.1 + 1.2 - 0.5 + 0.4 + 0.7 + 0.3 - 0.0 - 0.1 + 1.0 - 0.5
Campbell Caruthersville Doniphan Jackson Marble Hill Poplar Bluff Sikeston Cairo, Ill Section means	36.4 36.6 34.8 35.2 36.4 34.6 36.6 35.8	+ 0.4 + 0.8 + 0.4 - 0.2 - 3.0 + 1.7 0.0	41.2 41.8 40.2 38.2 39.1 41.3 38.1 40.0 38.9	+ 2.9 + 2.1 + 2.7 + 3.8 + 5.0 + 1.5 + 1.5 + 2.8	47.6 50.0 47.6 46.4 49.0 49.4 47.6 48.2	- 1.2 - 1.8 - 0.8 + 1.6 + 0.6 - 0.2	54.8 56.7 54.0 52.4 54.6 54.5 55.0 54.0 54.5	- 3.5 - 4.0 - 4.5 - 2.1 - 4.7 - 2.9 - 4.1 - 3.7	66.4 69.3 67.0 64.5 66.0 66.9 66.9	- 0.2 + 0.1 - 1.3 - 0.3 - 1.1 - 1.5 - 0.7	71.2 72.7 70.0 68.8 69.5 70.6 71.2 70.8 70.6	- 5.1 - 4.8 - 5.3 - 4.4 - 4.8 - 3.3 - 5.5 - 4.7	78.7 79.0 78.9 77.8 78.4 79.0 79.0 80.2 79.0	- 1.6 - 0.7 + 0.4 + 1.1 + 0.3 + 0.9 + 0.6 + 0.2	78.8 78.6 76.0 78.6 78.9 78.8 78.7 78.7	+ 1.2 - 0.2 + 1.6 + 0.9 + 1.2 + 0.9 + 0.9	66.5 65.8 64.6 66.2 67.2 68.2 66.4	- 5.0 - 5.3 - 4.2 - 4.1 - 3.3 - 4.4	52.8 54.9 52.3 50.4 52.2 52.8 53.4 53.4 52.8	+ 3.2 + 3.9 + 2.4 + 4.2 + 2.5 + 4.6 + 3.0 + 3.4	47.4 51.0 46.1 45.9 46.4 48.7 48.0 47.7	+ 1.1 - 1.5 - 0.8 + 2.0 + 1.3 + 0.6 + 0.4 + 0.4	39.6 43.6 38.8 37.5 37.8 38.5 40.6 39.6	+ 3.6 + 1.4 + 0.9 + 1.6 + 1.7 + 3.3 + 2.8 + 2.2	57.6 57.2 55.6 66.9 57.8	- 0.7 - 0.9 + 0.4 - 0.2 - 0.3 - 0.9
Ozark Plateau Arcadia Aurora Birchtree(near) Bolivar Dean Eldon Farmington Goodland Greenville Koshkonong Lehanon Lockwood Mountain Grove(near) Neoslo Rolla Salem(near) Seligman Seymour(near) Springfield Section Means	32.9 38.4 36.2 36.6 33.6 33.8 34.8 34.8 35.3 36.2 35.6 34.0 44.0 36.2 37.0 36.3	+ 0.8 + 4.9 + 1.8 + 2.5 + 2.2 + 2.2 + 2.2 + 2.3 + 0.3 + 3.5 + 2.1 + 1.1 + 9.3 + 1.9 + 2.7	35.7 39.7 39.1 40.0 41.6° 36.6° 37.0 38.4 41.2 35.6 41.2 37.9 37.2 40.2° 37.5 38.2	+ 2.2 + 6.1 + 4.2 + 5.6 + 6.8 + 4.7 + 1.4 + 5.5 + 3.7 + 3.9 + 3.8 + 3.5 + 2.7 + 2.7 + 2.7 + 3.9 + 3.0 + 3.0	44.2 48.4 46.9 49.4 50.2 46.2 45.2 45.2 49.2 44.2 48.6 46.8 45.2 50.8 46.8 47.0	- 0.6 + 2.8 - 0.5 + 3.3 + 1.3 + 2.7 - 1.1 + 0.3 - 0.4 + 0.4 + 1.8 - 1.7 + 4.6 + 1.6 + 1.6	49.8 53.2 55.6 55.6 55.6 55.6 51.5 51.6 53.5 48.4 52.0 51.3 52.1 50.9 53.6 50.6 51.8 52.1 50.9 53.6 50.6 51.3 55.8	- 5.5 - 2.5 - 2.5 - 1.5 - 4.8 - 5.4 - 3.2 - 7.3 - 7.3 - 4.0 - 2.9 - 0.2 - 2.9 - 4.7 - 2.8 - 4.2 - 3.7	63.0 66.6 65.6 67.0 66.1° 64.4 63.8 63.2 66.6 65.6 65.6 65.6 63.9 65.6 65.4 65.8 66.1 65.2	- 1.6 + 0.7 + 0.4 + 1.2 + 1.6 + 0.6 + 0.6 + 1.7 - 0.6 - 1.4 + 0.5 + 1.6 + 0.5 + 1.7 - 0.6 + 1.7 - 0.6 + 1.6 + 0.6 + 0.6	64.9 68.0 67.6 68.4 69.5 67.3° 66.9 66.0 67.3° 68.8° 65.6 68.7 66.6 68.7 66.6 67.5° 67.5° 66.8 67.2	- 7.1 - 5.8 - 5.1 - 4.4 - 3.5 - 5.9 - 6.1 	74.6 76.6 77.0° 77.1b 77.2° 76.5 75.8 78.0 75.9 77.4 76.8 75.8 76.8 76.6 76.6 76.6	- 1.3 - 1.2 + 0.4 - 0.1 - 0.5 + 0.2 + 1.2 - 0.6 - 0.3 - 1.0 - 0.2 + 0.8 - 1.7 0.0 - 1.7 0.0 - 0.2 - 0.4	73.7 76.6 76.4 77.8 76.8 75.4 75.0 75.4 76.4 76.4 76.9 74.6 77.7 75.3 75.9 76.2	- 0.8 - 0.2 + 0.5 + 0.3 + 0.4 + 0.6 + 0.5 - 0.9 - 0.8 + 1.1 - 1.5 + 0.3 + 0.0 + 1.1 + 0.3 + 0.0 +	62.2 66.4 65.3 63.2 70.6° 64.4 65.8 62.2 67.2° 64.4 67.6 65.4 67.2 65.8 62.6 68.8 62.6 68.8 63.2	- 5.4 5 4 5 4 2 6 4 9 6 4 9 6 4 9 6 4 9 6 7 6 1 6 4 9 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6	59.1 62.2 63.2 63.3 63.3 63.4 63.4 63.3 63.4 63.6 63.4 63.5 63.4 63.5 63.4 63.5 63.4 63.5 63	+ 3.0 + 3.7 + 3.4 + 3.6 + 5.0 + 3.8 + 2.4 + 3.4 + 4.1 + 4.2 + 5.9 + 2.6 + 4.5 + 4.5 + 4.5	43.0 46.3 46.0 52.0 41.8 44.6 44.6 46.1 46.1 46.4 43.4 46.8 43.4 46.8 43.8 44.9 47.6 414.4 45.4 45.4	- 1.0 + 0.3 - 0.5 - 3.4 + 0.3 + 0.3 + 0.3 - 2.6 - 1.3 - 3.2 - 0.4 - 1.7 - 1.9 + 0.4 - 1.7	36.1 39.6 38.6 38.7 36.6 38.1 37.3 36.6 40.4 35.8 39.7 36.6 39.4 36.8 37.4 36.8 37.4 36.8 37.4 37.9	+ 1.8	3.3 -6.8 -6.1 -9.0 -4.9 -5.2 -4.5 -6.8 -6.8 -6.8 -6.8 -6.8 -6.8 -6.8 -6.8	- 1.3 + 0.8 + 0.1 - 0.1 - 0.3 - 0.0 - 0.3 - 1 9 + 0.2 + 0.2 + 0.2 + 0.2 + 0.2 + 0.0 + 1.5 + 2.1 - 0.1
Southwest Plain. Amoret. Appleton City Centerview Clinton Harrisonville Lamar Lamente Marshall Nevada Warsaw Section Mcans.	34.4	+ 3.1	38.6 38.0 39.2	+ 6.3 + 6.7 + 7.3	48.6 48.8 49.2	+ 4.0 + 5.2 + 4.9	52.4 51.0 51.3°	- 3.4 - 5.1 - 4.4	67.0 67.2 66.8	+ 1.9 + 1.9 + 1.6	68.4 69.0 67.2	- 6.4 - 5.2 - 6.2	77.6 79.0 79.5	- 0.7 + 0.2 + 2.0	78.0 77.8 79.4	+ 0.2 + 0.8 + 2.6	66.0 67.2 68.6	- 4.3 - 2.9 - 1.6 - 3.5 - 3.6 - 4.0 - 1.8 - 2.8	52.2 58.2 ¹ 54.3 50.0 52.6 53.2	+ 3.1 + 0.1 + 5.7 + 4.0 + 3.7 + 5.2 + 5.3 + 5.1	45.1 45.0 46.2 42.5 44.5 44.6 45.5 45.6	- 1.0 + 0.1 - 1.1 + 0.1 - 2.1 + 0.2 - 0.1 + 1.2	37. 8 35. 0 39. 3 34. 8 37. 6 36. 8 36. 8 39. 0	- }	6.3 6.3 6.0 5.7	+ 0.5 + 1.6 + 0.7 - 0.4 + 0.6 + 1.8 + 1.1
Northwest Plateau. Bethany Chillicothe Conception Edgerton Grant City Kansas City Kidder Lexington Maryville Oregon St. Joseph Tarkio Trenton Section Means	30.3 29.0 30.0 32.0 29.6 33.6 27.9 33.5 30.0 32.4 31.9 29.2 28.4 30.6	+ 5.7 + 0.2 + 5.2 + 5.2 + 4.7 + 1.0 + 7.6 + 8.8 + 4.6 + 6.3 + 1.7 + 4.7	34.2 33.2 34.0 36.0° 34.0 37.2 31.4 37.6 34.8 36.4 35.2 32.2 33.2 34.6	+ 7.2 + 0.7 + 6.9 + 6.7 + 6.0 + 3.6 + 8.2 + 10.7 + 8.2 + 3.8 + 4.2 + 5.9	44.9 44.6 44.5 45.2 43.6 47.4 41.8 48.6 45.6 47.2 46.8 42.9 45.3 45.2	+ 4.9 + 3.0 + 5.0 + 2.3 + 4.7 - 0.6 + 5.7 + 8.4 + 7.9 + 4.0 + 2.3 + 4.1 + 4.3	49.9 49.0 48.6 50.7 ^t 48.0 51.4 46.5 52.2 49.3 51.2 50.6 48.2 50.4 50.4	- 1.3 - 4.3 - 3.3 - 3.5 - 3.4 - 5.9 - 1.9 - 0.8 - 2.7 - 3.3 - 4.0 - 2.2 - 3.1	66.6 65.4 66.2 67.6 65.3 67.8 63.8 63.2 65.3 68.0 67.2 64.4 66.0 66.3	+ 4.0 - 1.7 + 4.2 - 3.2 + 3.0 + 0.7 + 3.8 + 4.2 + 4.8 + 1.1 + 2.2 + 2.7	67.0° 67.0 66.8° 66.0 68.3 65.2 70.0 66.4 69.1 68.2 66.1 66.9 67.2	- 5.4 - 7.2 - 4.6 - 5.3 - 5.3 - 7.2 - 2.8 - 3.2 - 3.2 - 5.8 - 6.6 - 5.7 - 5.2	77.0 76.8 77.0 75.8° 76.0 78.4 74.2 79.6 75.4 77.5 77.6	+ 1.0 - 3.4 + 0.6 - 0.2 + 0.3 - 2.7 + 2.5 - 0.2 + 2.9 - 1.1 - 1.2 + 0.8 - 0.1	75.9° 75.4 75.7 76.7° 74.4 77.2 73.8 78.6 73.6 78.0 77.1 73.4 76.0°	+ 1.0 - 0.7 + 1.3 - 0.5 + 0.6 + 0.6 + 2.6 0.0 + 3.0 + 0.5 - 2.2 + 0.8 + 0.4	63 0 63.3 64.6 64.8 ⁵ 63.0 66.7 61.6 66.8 62.6 66.8 65.2 60,4 64.1 64.2	- 3.7	58.3	+ 2.2	42.6	+ 0.4	33.4	+ 3.5	3.7	+ 1.0

Letters of alphabet indicate number of days missing from report: thus [*] one day; [b] two days, etc.

(Continued from Page 49.)

Vegetation generally was about 10 days behind the average.

JUNE.—Decidedly a cool and wet month in all Misssouri. With a monthly mean temperature of 67.7° it was the second coolest June in forty years; and with 11.17 inches of water it was not only the wettest June but the wettest of all other months in sixty years. Over much of the State the monthly totals were from two to four times the normal. The Missouri River was bankful and running over in places, and nearly all tributaries were over banks doing great damage to crops and other property. Except some local storms of the tornado type in Holt, Andrew, Gentry, and Daviess on the 18th, the remainder of the State was free from storm damage. There was too much water for best results in wheat yields. Corn on the other hand, being clean and well cultivated, was in fine condition, the soil being rather dried out by the lack of moisture of preceding months, took care of all surplus June rains.

JULY.—Some few hot, sultry days, but mainly a pleasant summer month, and on the whole favorable to the farmer. Drier than normal, but the large surplus water of June apparently kept well rooted plants going in good condition. The corn condition was the most satisfactory for July in several years. The rounding out of grain harvesting and threshing, was favored by July's weather.

August.—This month's weather was also favorable for the farmers and other outdoor work most of the time. All crops made satisfactory progress. The temperature and sunshine approximated the usual. For the State, as a whole, the month was about 40 per cent wetter than normal, but the rains were well timed and geographically well distributed. Much plowing for fall seeding was done.

September.—Generally a pleasant month from the side of personal comfort, for farm interests and other outdoor occupations. Save a summer-like spell the second week, the month was mainly cool, with some outstanding cool days after the 20th. Frost was general on the 24th and locally of a killing nature to tender vegetation over the eastern part of the Ozarks and in scattered localities in northern sections. There was less rain than usual. Most crops were well advanced toward maturity. Wheat sowing made good progress, except locally in southern sections where the ground had become hard from insufficient rain.

OCTOBER.—Warmer than normal but mainly a fine outdoor month. Rainfall larger than normal, except in most of the Ozark region, where it was locally too dry for pastures and late plowing. In parts of the southeast there was too much water for best results. There were no frosts until the 20th, and then light which favored the quick maturing of some late crops. The first killing frost occurred the morning of the 31st, and even this was not of a killing nature in some localities, there being 16 stations with no freezing temperature.

November.—An outstanding wet month, and the wettest November of record. Other weather elements were near the normal. Unfavorable for the usual farm work, and most other outdoor occupations. Another unusual feature of this month, and a record breaker, was the extensive river floods. The 'Platte, Grand, Charitan, Salt, and Fabius Rivers of the northern part of the State; the Osage and Blackwater Rivers of the southern part, and the Missouri River from Lexington down to its mouth were out of banks, resulting in heavy damage to corn, wheat, cattle, and miseellaneous farm improvements. According to press news, the State highways were excessively damaged, but the State Highway Department put the damage at about \$60,000.

DECEMBER.—This was an unusually mild and pleasant month for winter. There were about three general precipitation

periods of from one to three days each, occurring on widely separated dates which permitted outdoor occupations with minimum hindrance. The requirement for home fuel was below the average. And automobile traffic was nearly continuous and heavy.

TORNADOES IN MISSOURI THE LAST TEN YEARS, 1918-1927.

About four tornadoes a year have been Missouri's average during the last ten years, according to accurate statistics compiled by the U. S. Weather Bureau office at Columbia, the section center for Missouri State.

The total length of tornado paths during the last ten years average 86 miles. Persons killed, 22; persons injured, 112; and property losses approximated \$2,689,700. All lists in this 10-year period are larger than ordinary because of one tornado—the one that struck the City of St. Louis on September 29, 1927. Deduct the St. Louis casualties from the table of statistics and we have an average of 15 persons killed; 62 injured; and property loss of \$488,400. The years 1925 and 1927 were outstanding in injury, death and destruction of property. The year 1926 stands alone as free from tornado disturbances.

THE MONTHLY DISTRIBUTION.

The earliest date of tornado occurrence during the last 10-year period was February 27, 1918, in Bates County; and the latest was November 18, 1921, in Butler County. The 10-year total, 39 tornadoes, was distributed among the months as follows: February, 1; March, 12; April, 7; May, 5; June, 4; July, 3; September, 5; and November, 2. With favorable weather tornadoes may develop in any month of the 12, but the season most favorable for them in Missouri is from the last ten days of March to the first ten days of June. During the last 10-year period March had the largest number of any other month; but during the previous 40 years, strange to say, March bad but 4 or possibly 5. April and May lead all other months, with the month of May well at the top of the list. As a rule, after the middle of June tornado hazard becomes less and less, except occasionally there is a slight increase in September.

THE AFTERNOON THE FAVORITE TIME OF DAY.

The afternoon is the most favorable time of the day in Missouri for tornadoes. During the last 10-year period only one occurred before noon (11.30 a. m., April 19, 1927, in the eastern part of Boone County.) Of the total 39 tornadoes, 21, or 54 per cent, occurred between the hours of 4 p. m. and 6.30 p. m. (This also holds good for the 50-year period.) The time of distribution was as follows: One before noon; five between 1 and 2 p. m.; one between 2 and 3 p. m.; five between 3 and 4 p. m.; eight between 4 and 5 p. m.; six between 5 and 6 p. m.; seven between 6 and 7 p. m.; one each for the hour of 7, 8, and 9 p. m.; three after 10 p. m.; and two after 11 p. m.

According to these statistics Missouri evening and night pleasures are rarely disturbed by visiting tornadoes.

NOT MORE FREQUENT NOW THAN IN PAST DECADES. (Chances Of A Person Being Killed Or Injured By A Tornado In Missouri Are Small.)

According to Weather Bureau statistics, tornadoes probably are not more frequent now than during several decades past. About 4 has been Missouri's quota for the last ten years; 4 for the ten years from 1887 to 1896; and the same average, 4, is the answer of the 50-year period beginning with the year 1877. The damage done in our more recent times is of course greater than at earlier times. That is because the country is more thickly settled now. The general direction of movement is the same, that is, tornadoes travel from some point in the west or southwest toward east or northeast.

Notwithstanding the fact that these storms may be more damaging now than formerly because of our more closely settled

communities, in an average year the chance of a person in Missouri being killed by a tornado is about 1 in 200,000; and about 1 in 36,360 of being injured. If there is no other causes for shortening our life-span except tornadoes, a person then would have a bet of 520 to 1 that the three-score and-ten allotment would be lived out. We might better express this ratio comparatively by saying that if every person in Missouri was due to live 70 years without tornadoes, life would be shorter by eight and one-half days because of tornado hazard.

The following table gives the more important statistics for the last ten years, 1918-1927. Only tornadoes considered.

	Number of	Total path-	Persons	Persons	Estimated
Year	Tornadoes.	length in	Killed	Injured	Damage.
		miles.		•	· ·
1918	8	37	14	25	\$305,000
1919	3	53	0	0	\$52,000
1920	5	78	13	18	\$253,000
1921	1	60	4	0	\$100,000
1922	2	89	3	12	\$105,000
1923	3	56	0	11	\$103,000
1924	5	124	3	4	\$306,000
$1925_{}$	3	108	11	156	\$581,000
1926	0	0	0	0	0
1927	9	259	177	893	\$24,845,000
Total _	39	864	225	1119	\$26,897,000
Averag	e 4	86	22	112	\$2,689,700

Monthly Data of the State for 1928

		Tempe	rature		Precipitation					
Month	Mean	Departure from Normal	Maximum	Minimum	Mean	Departure from Normal	Greatest	Least	No. Days with	
January February March April May June July August September October November December Year.	33.3 37.0 46.3 51.6 65.8 67.7 77.2 76.4 65.0 60.9 44.6 36.2 55.2	+ 2.9 + 5.2 + 2.5 - 3.5 + 1.2 - 5.8 - 0.2 + 0.4 + 3.5 + 0.1 + 2.3 + 0.4	71 89 88 95 91 102 99 95 94 79 81	-18 -2 10 16 29 40 48 45 28 22 9 0	0.87 2.28 1.54 4.79 2.84 11.17 2.97 5.35 2.61 3.83 5.10 2.24	-1.16 +0.13 -1.46 +1.06 -1.86 +6.50 -1.08 +1.67 -1.12 +1.08 +2.75 +0.21 +5.26	4.10 3.56 9.43 6.37 22.00 7.02 11.24 9.04	0.00 1.03 0.11 1.01 0.78 5.08 0.34 0.96 0.00 0.79 0.74 0.23	3 7 5 8 8 15 7 9 5 8 10 5	

Comparativ	e Annual	Data for	the State

	Ter	npera	ture	u u		Ter	nperat	ure	=
Year	Mean	Maximum	Minimum	Precipitation	Year	Mean	Maximum	Minimum	Precipitation
1888	54.4 54.0 55.6 55.5 54.1 53.6 53.2 53.6 55.1 55.6 56.7	111 107 106 108 101 106 108 108 104 108 105 116 103 102 100 103 101 109 101	-32 - 9 -11 -11 -20 -35 -26 -16 -20 -32 -16 -29 -17 -25 -23 -40 -13 -15 -25 -23 -20 -10 -10 -10 -10 -10 -10 -10 -1	41, 22 37, 91 35, 71 36, 04 42, 76 33, 19 33, 18 39, 30 44, 63 38, 82 53, 67 37, 32 52, 28 40, 15 41, 15 41, 18 42, 56 45, 16	1910. 1911. 1912. 1913. 1914. 1915. 1916. 1916. 1917. 1918. 1919. 1920. 1921. 1922. 1923. 1924. 1925. 1927. 1928. Avcrage 41 yrs.	55.0 56.9 53.6 56.5 56.1 54.8 55.2 55.2 54.3 55.5 55.2 54.3 55.3 55.3 55.3 55.3 55.3 55.3 55.3	109 113 105 110 109 102 107 111 106 105 108 108 106 110 102 102 	-24 -19 -36 -12 -18 -24 -23 -23 -10 -8 -6 -11 -24 -14 -20 -24 -18 	36,86 38,94 38,94 37,47 34,72 49,62 49,62 40,23 31,94 37,16 40,05 37,17 37,17 43,77 39,99 41,23 40,01 53,86 45,59 45,59

KILLING FROSTS, 1928

				,			
Stations	Last in Spring	First in Autumn	Days in Growing Season	Stations	Last in Spring	First in Autumn	Days in Grow- ing Season
Northeast Plain Brunswick Clifton Hill Columbia Do wning Fayette Fulton Hannibal Jefferson City Kirksville Louisiana Macon Mexico St. Charles St. Louis (2) Steffenville Unionville Warrenton Keokuk, lowa Southeast Lowlands Campbell Caruthersville Doniphan Jackson Marble Hill Poplar Bluff Sikeston Cairo, Ill Ozark Plateau Arcadia Aurora Birchtree Bolivar Dean Eldon	April 28 April 28 April 28 April 16 April 17 April 28 April 18 April 27 April 28 April 16 April 27 April 28 April 27 April 28 April 27 April 28 April 15 April 16 April 16 April 16 April 17 April 28 April 28 April 16 April 16 April 28 April 28 April 28 April 28 April 28 April 28 April 28 April 28 April 28 April 28 April 28 April 16 April 128	Oct. 29 Oct. 23 Nov. 4 Sept. 26 Sept. 26 Sept. 26 Sept. 26 Oct. 29 Oct. 29 Oct. 29 Oct. 29 Oct. 29 Oct. 29 Oct. 29 Oct. 29 Oct. 29 Oct. 31 Nov. 20 Nov. 20 Nov. 20 Oct. 23 Sept. 24 Oct. 31 Nov. 20 Sept. 24 Oct. 31 Nov. 20 Sept. 24 Oct. 31 Nov. 20 Oct. 23 Sept. 24 Oct. 31 Nov. 20 Oct. 23 Sept. 24 Oct. 31 Nov. 20 Oct. 23 Sept. 24 Oct. 31 Nov. 20 Oct. 23 Sept. 24 Oct. 31 Nov. 20 Oct. 23 Oct. 24 Oct. 24	184 178 203 152 151 164 198 185 164 198 186 219 219 219 219 219 219 219 219 219 219	Lebanon Lockwood Mountain Grove Neosho Rolla Salem(near) Seligman Seymour Springfield Southwest Plain Appleton City Centerview Clinton Harrisonville Lamant Lamonte Marshall Nevada Warsaw Northwest Plateau Bethany Chillicothe Conception Edgerton Grant City Kansas City Kidder Lexington Maryville Oregon St. Joseph Tarkio	tinned) May 8 April 16 April 29 April 29 April 28 April 28 April 15 April 16 April 28 April 16 April 16 April 16 April 16 April 16 April 16 April 16 April 19 April 19 April 19 April 10 April 28 April 20 April 28 April 27 April 28 April 28 April 28 April 28 April 29 April 29 April 29 April 20	Sept. 24 Oct. 31 Oct. 23 Oct. 23 Oct. 23 Sept. 24 Oct. 24 Oct. 23 Sept. 24 Nov. 3 Oct. 31 Oct. 31 Nov. 19 Nov. 3 Oct. 23 Oct. 23 Sept. 26 Oct. 29 Sept. 26 Oct. 29 Nov. 3 Oct. 20 Oct. 21 Oct. 21 Oct. 31 Oct. 21 Oct. 31 Oct. 22 Oct. 22 Nov. 3 Oct. 23 Oct. 23 Oct. 20 Oct. 29 Nov. 2 Oct. 28 Nov. 2 Oct. 28 Nov. 2 Oct. 28 Nov. 2 Oct. 29 Nov. 2 Oct. 29 Sept. 26 Oct. 29 Oct. 29 Sept. 26 Oct. 29 Oct. 29 Oct. 29 Sept. 26 Oct. 29 Sept. 26 Oct. 29 Sept. 26 Oct. 29 Sept. 26 Oct. 29 Sept. 26 Oct. 28 Sept. 26 Oct. 28 Sept. 26 Oct. 29 Sept. 26 Oct. 29 Sept. 26 Oct. 29 Sept. 26 Oct. 29 Sept. 26 Oct. 29 Sept. 26 Oct. 29 Sept. 26 Oct. 29	139 198 179 201 178 178 179 191 149 202 178 186 175 202 178 181 187 181 185 181 187 181 181
Farmington Goodland		Sept. 24 Sept. 24	149 139				

TORNADOES IN MISSOURI.													
Year	Month	Day	Hours beginning	Place, Counties crossed	Path miles	No. dead	No. inj.	Estimated damage					
1919	March	15	1.30 p. m.	Nodaway	11	0	0	\$23,000					
1919	March	15	4.15 p. m.	Vernon, St. Clair	50	0	1	\$28,000					
1919	May	17	11.00 p. m.	Harrison	2	0	0	\$1,000					
1920	March	11	1.00 p. m.	Vernon	1	3	0	\$75,000					
1920	March	11	4.00 p. m.	Taney	16	10	18	\$150,000					
1920	March	28	2.30 a. m.	Wright	3	0	0	\$3,000					
1920	April	19	5.30 p. m.	Franklin, St. Charles	38	0	0	\$15,000					
1920	July	7	10.30 p. m.	Marion	20	0	0	\$8,000					
1921	November	18	5.00 p. m.	Butler	60	4	0	\$100,000					
1922	March	5	4.45 p. m.	Jackson	40	0	0	\$5,000					
1922	April	10	3.00 p. m.	Lawrence, Greene	79	3	12	\$100,000					
1923	March	3	5.33 p. m.	Buchanan	30	0	9	\$50,000					
1923	March	5	9.00 p. m.	Marion	20	0	0	\$3,000					
1923	March	11	7.45 p. m.	Cape Girardeau	6	0	2	\$50,000					
1924	March	28	5.00 p. m.	Holt	4	0	0	\$4,000					
1924	March	28	10.00 p. m.	Scott, Cape Girardeau, New Madrid	50	3	1	\$200,000					
1924	July	24	5.25 p. m.	Buchanan	25	0	3	\$65,000					
1924	September	19	6.00 p. m.	Reynolds, Iron	30	0	0	\$30,000					
1924	November	11	4.00 p. m.	Webster, Shannon	15	0	0	\$7,000					
1925	March	18	1.00 p. m.	Reynolds, Iron, Madison, Bollinger, Perry	85	11	156	\$564,000					
1925	June	7	4.00 p. m.	Atchison	18	0	0	\$7,000					
1925	September	8	3.00 p. m.	Audrain	5	0	0	\$10,000					
1927	April	19	11.30 a. m.	Boone, Callaway, Audrain,	36	1	6	\$50,000					
1927	April	19	1.00 p. m.	Lincoln	20	0	12	\$20,000					
1927	May	8	8.00 p. m.	Camden — Audrain	110	11	51	\$308,000					
1927	May	9	3.00 p. m,	Ripley—Butler	28	87	300	\$2,120,000					
1927	May	18	3.00 p. m.	Randolph(2)	10	5	11	\$107,000					
1927	May	24	5.18 p. m.	Buchanan	5	0	2	\$200,000					
1927	July	28	4.45 p. m.	Jackson	10	0	0	\$25,000					
1927	September	29	1.00 p. m.	St. Louis City	10	72	500	\$22,000,000					
1927	September	29	4.00 p. m,	Butler	30	3	11	\$15,000					
1928	May	15	3.30 p. m.	Atchison	16	0	0	\$10,000					
1928	May	15	6.30 p. m.	Cass	3	0	0	\$8,000					
1928	June	18	4.00 p. m.	Holt	6	1	2	\$50,000					
1928	June	18	6.30 p. m.	Andrew, Gentry	26	0	$\overline{0}$	\$100,000					
1928	June	18	8.00 p. m.	Daviess	6	0	0	\$50,000					
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Note: For tornado record for past years up to and including 1918, see Annual Summary, 1918.

WBO, St. Louis, 2-13-29-1025,









